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Citations in this bibliography were selected for their relevance to EPA's environmental statistics effort and include references to books, journal articles, government reports and conference papers. The bibliography is organized according to the following program areas: 1) General (Interdisciplinary), 2) Air, 3) Water, 4) Hazardous Waste, 5)Radiation,and 6)Risk Assessment. The citations cover a period from 1987 through March 1990.

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Environmental Statistics

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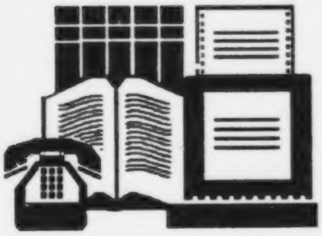
ENVIRONMENTAL STATISTICS

FEBRUARY 1990



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INTRODUCTION

Environmental statistics is a complex subject that cuts across many disciplines and organizations. It is a crucial aid to designing and evaluating verifiable data collection systems and to making valid conclusions for appropriate regulatory response. Likewise, it is essential to determining the need for enforcement action, once those regulations are in place. Basically, it does that by providing a consistent mechanism for interpreting data and for making correct inferences from samples. This bibliography has pulled together citations from a wide range of recent documents and includes references that may be of particular interest to the statistical community and of general interest to environmentalists.

The Library wishes to thank Kay Wain of the Statistical Policy Branch, Office of Policy Planning and Evaluation for her assistance in the planning and review of this bibliography.

Citations include books, journal articles, government reports and conference papers. They were selected for their relevance to EPA's environmental statistics effort. The bibliography is organized according to the major program areas: 1) General (interdisciplinary), 2) Air, 3) Water, 4) Hazardous Waste, 5) Solid Waste, 6) Radiation and 7) Risk Assessments.

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[COM] **COMPENDEX PLUS**
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345 East 47th Street,
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[ENV] **ENVIROLINE**
R.R. Bowker Co.
245 West 17th Street
New York, NY 10011

[MAT] **MATHSCI**
Taissa T. Kusma
Manager Database Services
American Mathematical Society
P.O. Box 6248
Providence, RI 02940

[NT] **NTIS**
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

[PA] **POLLUTION ABSTRACTS**
Director, Database Services
Cambridge Scientific Abstracts
7200 Wisconsin Avenue
Bethesda, MD 20814

We hope this bibliography is useful. If you have any questions or wish to obtain additional copies, please contact the EPA Headquarters Library staff at (202) 382-5921.

I. General

1105290

Aggregation of ecological networks based on information theory. System modelling and optimization (Tokyo, 1987)

Hirata, Hironori (Department of Electronic Engineering, Chiba University, Yayoi, Chiba, Chiba, 260, Japan)
Sugai, Yasuo (Department of Electronic Engineering, Chiba University, Yayoi, Chiba, Chiba, 260, Japan)

1988,
Springer, Berlin-New York,; 604--613,,
Series: Lecture Notes in Control and Inform. Sci., 113,
Language: English
Document Type: Proceedings Paper
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: MEDIUM (16 lines)

Summary: Regarding an ecological network as a communication channel, the information contained in the structure of an ecological network may be theoretically defined by the concept of mutual information. Optimal aggregation minimizes the difference of mutual information between object system and aggregated model. The information cannot increase (it generally decreases) during the process of network aggregation. First, we study what kind of patterns of structure of ecological networks result in no aggregation loss. Parallel structures are shown as special patterns of structure which result in no loss of information. Parallel structures generally tend to minimize aggregation loss. Second, we show how grouping compartments so as to minimize the loss of mutual information creates collections of species, i.e., how aggregation identifies the macro-structure (e.g.\ hierarchical structure) of ecological networks. Approximate aggregation is applied to several real ecological networks." [MAT]

89-05976

Alternative policies for environmental management: Regulations, taxes/subsidies, and amenity markets

Clark, J.M.
Univ. Washington, Seattle, WA 98195, USA
DISS. ABST. INT. PT. B - SCI. & ENG VOL. 49, NO. 9, Publ.Yr: 1989
SUMMARY LANGUAGE - ENGLISH; Diss. Ph.D. Order No.: DA8826376.
Languages: ENGLISH

This research compares three policy alternatives/institutions for managing environmental problems, discusses the reward systems inherent in each system and evaluates the relative efficiency of outcomes under the different alternatives using a timber harvesting/fish habitat case study and a mathematical model. Several policy options are available to resolve environmental conflicts. Regulations, common in the United States, are generally inefficient. Regulations fail to provide incentives to individuals to provide socially desirable resources, particularly those of a "public good" nature. Regulations offer incentives to transfer wealth between client groups rather than provide environmental benefits. [PA]

89-02604

Analysis of bioassay data drawn from several sources

Darby, W.P.; Gohagan, J.K.
Dep. Eng. and Policy, Sch. Eng. and Appl. Sci., Washington Univ., St. Louis, MO 63130, USA
7. Annual Meeting of the American College of Toxicology Philadelphia, PA (USA) Nov 1986
J. AM. COLL. TOXICOL VOL. 7, NO. 5, pp. 591-600, Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The article presents a review of some important considerations for scientists and regulatory decision makers who are charged with the task of drawing a conclusion from an existing and growing body of bioassay data to evaluate the toxicity of a compound. Two general approaches are outlined, based on classic statistical methods and on Bayesian statistical methods. Their advantages and disadvantages are discussed in relation to the overall decision-making process. The article concludes by presenting an application of the Bayesian approach to the body of bioassay data available at the time of the regulatory decision concerning the link between saccharin and bladder cancer. [PA]

89-02601

Analysis of uncertainty and reaching broad conclusions

North, D.W.
Decision Focus Inc., Los Altos, CA 94022, USA
7. Annual Meeting of the American College of Toxicology Philadelphia, PA (USA) Nov 1986
J. AM. COLL. TOXICOL VOL. 7, NO. 5, pp. 583-590, Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Probability theory can provide a general way of reasoning about uncertainty, even when data are sparse or absent. The idea that probabilities can represent judgment is a basic principle for decision analysis and for the Bayesian school of statistics. The use of judgmental probabilities and Bayesian statistical methods for the analysis of toxicological data appears to be promising in reaching broad conclusions for policy and for research planning. Illustrative examples are given using quantal dose-response data from carcinogenicity bioassays for two chemicals, perchloroethylene and alachlor. [PA]

1105288

Bayesian decisions in ecological-economic systems.

Brusilovskii, P. M.
Nasyrov, F. S.
Automation and Remote Control, 1988, 49, no. 8, part 1, 1013--1016
ISSN: 0005-1179 CODEN: AURCAT
Source: Avtomat. i Telemekh., 1988,, no. 8,
Language: English
Original Language: Russian Original Summary Language: English
Document Type: Journal; Journal Translation
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (5 lines)

Summary: This paper is concerned with decision making in ecological--economic systems with ecological forecasting through representation of ecological phenomena in various, more or less equally legitimate, models. For the binary case the problem of minimizing the Bayesian risk is solved when the probability of one kind of error is specified." [MAT]

1045001

Boundedness and stability of a food chain system with several resources.

Dai, Guo Ren (Department of Mathematics, Sichuan University, Chengdu, Sichuan, Peoples Republic of China)
Chen, Lan Sun (Institute of Mathematics, Academia Sinica, Beijing, Peoples Republic of China)
Acta Mathematicae Applicatae Sinica. Yingyong Shuxue Xuebao, 1988, 11 , no. 2, 253--256. ISSN: 0254-3079
Language: Chinese
Document Type: Journal
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (7 lines)

The authors discuss a food chain system $\dot x\sb i=x\sb il\sb i(x\sb 1,\cdots,x \sb n)$, where $l\sb i(x\sb 1,\cdots,x\sb n)$ $(i=1,\cdots,n)$ are some linear functions of $x\sb 1,\cdots,x\sb n$, and $(x\sb 1,\cdots,x\sb n)$ is in the positive orthant. In addition to the boundedness of solutions, and the existence and uniqueness of the positive equilibrium, they show the global asymptotical stability of the positive equilibrium in terms of a Lypunov function. [MAT]

1044722

Comment on: The control of environmental pollution and optimal investment and employment decisions

[Optimal Control Appl. Methods 8 (1987), no. 1, 21--36; MR 87k:90080] by W. T. Lin.
Hartl, R. F. (Institute for Econometrics and Operations Research, Technische Universitat Wien , 1040 Vienna, Austria)
Contributors: Lin, W. T.
Optimal Control Applications & Methods , 1988, 9, no. 3, 337--339.
Language: English
Document Type: Journal
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (6 lines)

From the text: This comment is to point out that a recent paper by Lin (see the paper cited in the heading) on pollution control contains some errors in applying and analysing the maximum principle conditions. Furthermore, some questions concerning the validity of the model are raised." [MAT]

0198905

A COMPUTER-BASED METHOD OF WILDERNESS EVALUATION,

LESSLIE ROBERT G. AUSTRALIAN NATL UNIV, ; MACKEY BRENDAN G. ;
PREECE KATHRYN
ENV CONSERVATION, AUTUMN 88, V15, N3, P225(8)
JOURNAL ARTICLE

A COMPUTER-BASED WILDERNESS SURVEY METHODOLOGY WAS DEVELOPED FOR A NATIONAL WILDERNESS QUALITY SURVEY IN AUSTRALIA. THE APPROACH PLACES EMPHASIS ON MEASURING VARIATION IN WILDERNESS QUALITY BY USING FOUR INDICATORS THAT REPRESENT THE ESSENTIAL ATTRIBUTES OF REMOTENESS AND NATURALNESS: REMOTENESS FROM SETTLEMENT AND FROM ACCESS, AESTHETIC NATURALNESS, AND BIOPHYSICAL NATURALNESS. THIS PERMITS A PRECISE ASSESSMENT TO BE MADE OF THE WILDERNESS RESOURCE, UNDERSCORING THESE FACTORS WHICH CONTRIBUTE TO OR COMPROMISE WILDERNESS QUALITY. THE COMPUTER-BASED STORAGE AND ANALYSIS OF DATA ALLOWS SURVEYS TO BE PERFORMED OVER LARGE AREAS YET AT A RELATIVELY FINE LEVEL OF RESOLUTION THAT IS APPROPRIATE TO LOCALIZED PLANNING NEEDS. TRIAL APPLICATION TO THE STATE OF VICTORIA, AUSTRALIA, IS DISCUSSED. (3 MAPS, 13 REFERENCES, 1 TABLE) [ENV]

1044721

A discussion of methodological and modelling issues. Comment on: The control of environmental pollution and optimal investment and employment decisions

[Optimal Control Appl. Methods 8 (1987), no. 1, 21--36; MR 87k:90080]
by W. T. Lin.
Forster, Bruce A. (Department of Mathematics and Statistics,
University of Guelph, Guelph, Ontario, N1G 2W1, Canada)
Contributors: Lin, W. T.
Optimal Control Applications & Methods , 1988, 9, no. 3, 333--336.
!SSN: Language: English
Document Type: Journal
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (8 lines)

Summary: In a recent issue of this journal, Lin (see the paper cited in the heading) analysed a pollution control model that is designed to include adjustment costs, investment, employment and inflation. His analysis of the control theoretic solution appears to contain a number of errors which are pointed out here. Also, the model that he constructed has some awkward features in the view of this analyst." [MAT]

1955721

Dynamic aspects of an economic optimum for the quality of the environment.

Gusev, A. A.
Varlamova, O. S.
Ekonomika i Matematicheskie Metody , 1988, 24, no. 3, 447--457.
CODEN: EMAMBV
Language: Russian
Document Type: Journal
Subfile: CMP (Current Mathematical Publications) AMS
Type of Abstract: No review planned
[MAT]

89-00183

Effect of normal standard errors on lognormal distributions

Savoie, D.L.
Rosenstiel Sch. Mar. and Atmos. Sci., Univ. Miami, 4600 Rickenbacker Causeway, Miami, FL 33149-1098, USA
ATMOS. ENVIRON VOL. 22, NO. 9, pp. 1957-1962, Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Simulated "empirical" data sets were generated to assess the effect of a normally distributed blank on the apparent frequency distribution of a constituent whose concentrations are actually lognormally distributed. When the standard deviation of the blank (s sub(blank)) is relatively small, on the order of 10-50% of the geometric mean, the major consequence is a significant downturn in the cumulative probability plot at the low end of the concentration scale. With larger standard deviations, the upper portion of the plot is also substantially affected; concentrations for a given cumulative frequency can be significantly higher than those which actually exist. Regression of the data above the detection limit (defined as 2 times s sub(blank)) can yield reasonably good estimates of the actual distribution parameters even when the standard deviation is comparable to the actual geometric mean. At higher standard deviations, regression analysis yields substantially biased results. [PA]

NTIS No: DE88753218/HDM

Title: EXINT - Combination of the Single-Medium Models EXSOL, EXWAT, and EXAIR to a Multi-Media Model. Main Report

Performing Organization: Gesellschaft fuer Strahlen- und Umweltforschung m.b.H. Muenchen, Neuherberg (Germany, F.R.). Projektgruppe Umweltgefaehrdungsponteniale von Chemikalien.

Report No: GSF-32/87

Notes: Portions of this document are illegible in microfiche products. ; In German.; U.S. Sales Only. Portions of this document are illegible in microfiche products.

Date: Dec 87 Pages: 60p NTIS Price Code: PC A04/MF A01

Language: German

Abstract: Mathematical models which consider the most relevant environmental transport and transformation processes, were developed for the description of the environmental fate of chemicals. Three models regarding the behaviour in soil (EXSOL), surface waters (EXWAT) and lower troposphere (EXAIR) together with another model (EXINT) which describes the exchange processes between these three media form the core of a system for exposure estimations. Two further models are available for special situations. For estimating ecotoxicological effects, use is made from toxicological single-species-tests (ETTOX). The release from the technosphere into the three media soil, water and air is determined from the production volume and the use pattern (RLTEC). Environmental hazard potentials are derived from release, fate and effect potentials, and applied to priority setting among existing chemicals. For this purpose, the models and the decision aids are combined in a computer program E4CHEM (Exposure and Ecotoxicity Estimation for Environmental CHEMicals). By means of E4CHEM, descriptors of the environmental hazard are calculated from substance data with predetermined environmental conditions. The descriptors are defined with the aim to correspond with the selection criteria of the German Chemicals Act. The final results of the calculations are lists of chemicals in the order of increasing hazard. (ERA citation 13:034887) [NT]

89-05839

A method for the estimation of chronic disease morbidity and trends from mortality data

Verdecchia, A.; Capocaccia, R.; Egidi, V.; Golini, A.
Ist. Super. Sant., Viale Regina Elena 299, 00161 Rome, Italy
STAT. MED VOL. 8, NO. 2, pp. 201-206, Publ.Yr: 1989
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Measures of chronic degenerative disease diffusion, such as incidence and prevalence rates, are a basic need for epidemiologists and others working in many fields of human sciences. Equations relating death probabilities to incidence and survival probabilities for chronic degenerative diseases are derived from a cohort point of view. A maximum likelihood approach is adopted for the estimation of incidence as a function of time related covariates. When time series of mortality data are available, the model can be used to describe and analyse levels and dynamics of morbidity. A trial application to lung and breast cancer is given for the province of Varese, Italy, where incidence data are available from the Lombardy Cancer Register. [PA]

02768118

Title: Numerical approach to solution of pollutant transport models using personal computers.

Author: Cadena, Fernando
Corporate Source: New Mexico State Univ, Las Cruces, NM, USA
Source: CoED (Journal) (Computers in Education Division of ASEE) v 9 n 2 Apr-Jun 1989 p 34-36
Publication Year: 1989
Language: English
Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical)

Abstract: The number of significant digits stored by personal computers during calculation of exponential and complementary error functions in pollutant transport models is frequently insufficient, even when double-precision is used. A numerical simplification overcomes this limitation and increases output precision. A QUICKBASIC program is presented to illustrate use of this numerical simplification. (Author abstract) 7 Refs. [COM]

89-00439

Parametric and nonparametric tests for dependent data

El-Shaarawi, A.H.; Damsleth, E.
Natl. Water Res. Inst., Canada Cent. Inland Waters, Burlington, Ont. L7R 4A6, Canada
WATER RESOUR. BULL VOL. 24, NO. 3, pp. 513-519, Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Simulation and analytical results show that ignoring serial dependence can have serious effects on the performance of the t, sign, and Wilcoxen tests. In particular, the true significance levels of these tests are altered significantly from the intended nominal levels. Modifications for these tests are given and shown to have the correct significance levels. Furthermore, an estimate of serial correlation is suggested for binary data and evaluated by simulation. An application to the toxic contaminants data from the Niagara River concludes the paper. [PA]

1969783

Some problems of approximate aggregation
Nekotorye zadachi priblizhennogo agregirovaniya.

Ionova, I. V.
Smirnova, T. G.
Publ: Akad. Nauk SSSR, Vychisl. Tsentr, Moscow,
1988, 36 pp.
Series: Soobshcheniya po Prikladnoi Matematike. [Reports in Applied Mathematics]
Language: Russian
Document Type: Book
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (6 lines)

Summary (translated from the Russian): We study a problem of approximate aggregation for a model of interproduct balance and for a dynamic model that is a system of ordinary differential equations, in the right-hand sides of which unknown parameters may appear. We consider the case where aggregates are linear functions of the original variables. We obtain results for some classes of ecological and economic models." [MAT]

1044946

Structure des modeles mathematiques en biologie.

The structure of mathematical models in biology: Analysis and optimization of systems (Antibes, 1988)

Gouze, Jean-Luc (Institut National de Recherche en Informatique Automatique (INRIA), 06560 Valbonne Sophia Antipolis, France)
1988,
Springer, Berlin-New York,; 1152--1163,,
Series: Lecture Notes in Control and Inform. Sci., 111,
Language: French Summary Language: English
Document Type: Proceedings Paper
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (6 lines)

Summary: We propose a rather general methodology for building mathematical models in biology. From the structure of the model, we deduce results on the behaviour of the solutions of the system: existence and stability of stationary points, of periodic solutions. These results depend only on the structural relations in the model, and not on the precise expression of the functions that describe these relations." For the entire collection see MR 89c:00031. [MAT]

II A. Air-General

NTIS No: PB88-145313/HDM

Title: Computer Architecture for Research in Meteorology and Atmospheric Chemistry; Final rept.

Performing Organization: Microelectronics Center of North Carolina, Research Triangle Park.

Report No: EPA/600/3-87/049

Sponsoring Organization: Research Triangle Inst., Research Triangle Park, NC.; Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.

Notes: Prepared in cooperation with Research Triangle Inst., Research Triangle Park, NC. Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.

Date: Dec 87 Pages: 138p NTIS Price Code: PC A07/MF A01

Language: English

Abstract: The study examines the feasibility of constructing a peripheral hardware module that could be attached to a mini or midsized computer to accelerate the execution of large air pollution models, such as the EPA's Regional Oxidant Model (ROM). Crucial information necessary to design such an accelerator is acquired by running the ROM computer code under instrumentation which shows how the computational load is distributed within the model and the data transfer rates between each step of the model execution. These data reveal that a model such as the ROM is not amenable to acceleration using a vector-type architecture because the computational burden is too inhomogeneous in space and time. Simulations show that an accelerator based on the tile machine architecture would be capable of executing the ROM up to 100 times faster than the host machine working alone. [NT]

87-03105

Conditional concentration statistics for surface plumes in the atmospheric boundary layer

Sawford, B.L.
CSIRO Div. Atmos. Res., Private Bag No. 1, PO Mordialloc, Vic. 3195, Australia
BOUNDARY-LAYER METEOROL VOL. 38, NO. 3, pp. 209-223, Publ.Yr: 1987
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

A set of concentration time series from ground-level plumes in the atmosphere has been used to generate conditionally sampled (zeros ignored) plume concentration statistics. These have been compared and contrasted with corresponding unconditionally sampled statistics. It is found that conditional statistics are much less sensitive to the location of the receptor (relative to the mean plume) and to averaging time. Indeed, most of the variation apparent in unconditionally sampled statistics (both explained and unexplained) resides in the intermittency, the fraction of non-zero readings. The data are used to test three commonly used models for the concentration frequency distribution. At the simplest level of modelling, it is assumed that conditional statistics are invariant; then the data are best represented by a clipped-normal distribution. However, an exponential distribution is only slightly conservative and has the advantage of simplicity. A log-normal distribution is clearly not supported by the data. With this simple approach the intermittency remains unspecified and this is a serious deficiency. [PA]

NTIS No: PB88-202387/HDM

Title: Dispersion Model for Elevated Dense Gas Jet Chemical Releases. Volume 1. Documentation

Performing Organization: Arkansas Univ., Fayetteville.
Report No: EPA/450/4-88/006A; EPA/SW/DK-88/048A
Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.
Notes: For system on diskette, see PB88-202379. See also Volume 2, PB88-202395.; Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.
Date: Apr 88 Pages: 82p NTIS Price Code: PC A05/MF A01
Language: English

Abstract: The document is the first of two volumes describing the development and use of a computer program designed to model the dispersion of heavier-than-air gases which are emitted into the atmosphere with significant velocity through elevated ports. The program incorporates the sequential execution of two models. The first one (Ooms) calculates the trajectory and dispersion of the gas plume as it falls to the ground. The second (DEGADIS) calculates the downwind dispersion after the plume touches ground. The first volume discusses the development of both models and establishes the mathematical framework for the calculations.- In addition, the trajectory portion of the model is evaluated in reference to wind tunnel data. [NT]

NTIS No: PB88-202395/HDM
Title: Dispersion Model for Elevated Dense Gas Jet Chemical Releases. Volume 2. User's Guide
Performing Organization: Arkansas Univ., Fayetteville.
Report No: EPA/450/4-88/006B; EPA/SW/DK-88/048B
Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.
Notes: For system on diskette, see PB88-202379. See also Volume 1, PB88-202387.; Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.
Date: Apr 88 Pages: 377p NTIS Price Code: PC A17/MF A01
Language: English

Abstract: The mathematical modeling techniques used to predict atmospheric dispersion of denser-than-air gases in the Ooms and DEGADIS models are briefly summarized. The Ooms/DEGRADIS model was written in FORTRAN with specific intent for compilation and execution on a Digital Equipment Corporation VAX computer. The Ooms model describes the release and subsequent dilution and trajectory of an elevated gas jet as a gas plume. If the plume falls to ground level, DEGADIS describes the resulting ground-level plume. DEGADIS can also be used to describe the release and dilution from a low-momentum, ground-level release. The necessary model-input information to simulate a denser-than-air gas release is summarized. Example simulations of steady-state and transient release and guidelines for installation of the models are included. The Ooms and DEGADIS models are listed along with certain program variables and diagnostic messages. [NT]

NTIS No: PB88-202379/HDM
Title: Dispersion Model for Elevated Dense Gas Jet Chemical Releases (Ooms/DEGADIS) (for Microcomputers); Software
Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.
Report No: EPA/SW/DK-88/048
Notes: The software is contained on 5 1/4-inch diskette, double sided, double density compatible with the IBM PC microcomputer. Diskettes are in ASCII format. Price includes documentation, PB88-202387 and PB88-202395. Date: Apr 88 Pages: 2 diskettes NTIS Price Code: CP D99
Language: English

Abstract: The computer program, Ooms/DEGADIS, found on these diskettes and described in the EPA report entitled, 'A Dispersion Model for Elevated Dense Gas Jet Chemical Releases - Volumes 1 & 2' (EPA 450/4-88-006a & b), is a VAX-operational program designed to simulate the dispersion of heavier-than-air gases which are emitted into the atmosphere with significant velocity through elevated ports. The program incorporates the sequential execution of two models. The first one (Ooms) calculates the trajectory and dispersion of the gas plume as it falls to the ground. The second (DEGADIS) calculates the downwind dispersion of the plume after it touches the ground. Users are referred to the Preface in the User's Guide for specific instructions for program implementation...Software Description: The program is written in FORTRAN with specific intent for compilation and execution on a Digital Equipment Corporation VAX computer. Implementation of the model on any other computer system may be attempted at the risk of the user. To facilitate dissemination of the model, it is being provided on two PC-compatible diskettes. The model should be uploaded via modem from a PC terminal to host VAX computer, and several files must then be renamed prior to compilation and execution. [NT]

NTIS No: PB88-180062/HDM

Title: Evaluation and Assessment of UNAMAP (User's Network for Applied Modeling of Air Pollution); Rept. for Jul 86-Nov 87
Performing Organization: Battelle Columbus Div., Washington, DC.
Report No: EPA/600/3-88/009
Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.
Notes: Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.
Date: Mar 88 Pages: 237p NTIS Price Code: PC A11/MF A01
Language: English

Abstract: The Evaluation and Assessment of UNAMAP is a study to determine how best to improve the usefulness and availability of the UNAMAP air pollution dispersion models. The report describes a plan for implementing a series of recommended improvements to the UNAMAP program. It also describes the earlier parts of the study upon which the plan is based. The study consisted of a technology assessment followed by data collection and analysis which were used to develop the strategy and the specific improvements contained in the plan. The overview includes a summary of the data collected during the study, and the conclusion, drawn from analysis of that data. The analysis indicates that improvements to UNAMAP are needed in the areas of: (1) model accuracy; (2) model documentation; (3) user support; (4) data collection; (5) data input: and, (6) computer compatibility. The report describes a plan which is based on a strategy that is consistent with the longterm objectives for UNAMAP. The report contains a strategic framework for improving UNAMAP. The strategic framework guides the implementation and strikes a balance between the goals of advancing dispersion modeling research and transferring technology to the public. Included in the plan is a set of ten specific recommended improvements which are described and broken into specific tasks. Estimates of time and cost required to implement each improvement are given at the task level. Finally, the recommended improvements are grouped into three phases. A schedule is presented at the task level for the five recommended improvements in Phase 1. [NT]

NTIS No: PB89-123020/HDM

Title: Indoor Air Pollution Source Database;

Journal article Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.

Report No: EPA/600/J-88/178

Notes: Pub. in JAPCA, v38 n5 p670-671 May 88.

Date: 1988 Pages: 5p NTIS Price Code: PC A02/MF A01

Language: English

Document Type: Journal article

Abstract: The paper, directed to individual interested in indoor air pollution, is an introduction, and directions for the use of, the EPA indoor air pollution source database (also known as the indoor air source emissions database). The database is a computerized system containing source characterization studies done in the U.S. and abroad. It addresses the entire range of indoor air sources. It provides ready access to such information as: emission factors determined for each of the pollutants and sources tested, data about the test facility, conditions of the experiment, sampling and analytical data, and an abstract of each publication. The program also includes options for researchers carrying out their own source characterization studies. The database is currently available in a dBase III version or a Clipper compiled version. [NT]

NTIS No: PB88-181052/HDM

Title: Model and Data Base Description for California's Level 1 PM(10) Assessment Package; Final rept. 15 Jul 85-30 Apr 87

Performing Organization: Nevada Univ. System, Reno. Desert Research Inst.

Report No: DRI-8066-002.1F1; ARB-R-88/330

Sponsoring Organization: Sonoma Technology, Inc., Santa Rosa, CA.; Environmental Monitoring and Services, Inc., Camarillo, CA.; California State Air Resources Board, Sacramento.

Notes: See also PB88-181060.; Prepared in cooperation with Sonoma Technology, Inc., Santa Rosa, CA., and Environmental Monitoring and Services, Inc., Camarillo, CA. Sponsored by California State Air Resources Board, Sacramento.

Date: Sep 87 Pages: 170p NTIS Price Code: PC A08/MF A01

Language: English

Abstract: A Level I PM(10) Assessment Package is described which will allow initial estimates to be made of the source contributions to PM(10) receptor concentrations. The package consists of the Principal

Components Analysis, Chemical Mass Balance (CMB), and Industrial Source Complex-Short Term models implemented on IBM/PC compatible microcomputers. The software is applicable to existing data sets and is consistent with EPA's protocols for application and validation of the CMB receptor model and for reconciling differences among receptor and dispersion models. The document describes the models which are included in the Level I PM(10) Assessment Package, the measurement methods which are commonly applied to obtain model input data, and the availability of these data in the state of California. A companion users' manual provides step-by-step instructions on the application of the package to real data. [NT]

NTIS No: PB88-181060/HDM
Title: Model and Data Base Description for California's Level 1 PM(10) Assessment Package: Users' Guide; Final rept. 15 Jul 85-30 Apr 87
Performing Organization: Nevada Univ. System, Reno. Desert Research Inst. Report No: DRI-8066.2F; ARB-R-88/331
Sponsoring Organization: California State Air Resources Board, Sacramento. Notes: See also PB88-181052.; Sponsored by California State Air Resources Board, Sacramento.
Date: Oct 87 Pages: 125p NTIS Price Code: PC A06/MF A01
Language: English

Abstract: A Level I PM(10) Assessment Package is described which will allow initial estimates to be made of the source contributions to PM(10) receptor concentrations. The package consists of the Principal Components Analysis. Chemical Mass Balance, and Industrial Source Complex-Short Term models implemented on IBM/PC compatible microcomputers. The software is applicable to existing data sets and is consistent with EPA's protocols for application and validation of the CMB receptor model and for reconciling differences among receptor and dispersion models. The document describes the models which are included in the Level I PM(10) Assessment Package, the measurement methods which are commonly applied to obtain model input data, and the availability of these data in the state of California. A companion users' manual provides step-by-step instructions on the application of the package to real data. [NT]

1977188

Numerical treatment of large-scale air pollution models.

Zlatev, Z. (Riso National Laboratory , 4000 Roskilde, Denmark)
Berkowicz, R. (Riso National Laboratory , 4000 Roskilde, Denmark)
Corporate Source Codes: DK-RNL; DK-RNL
Computers & Mathematics with Applications. An International Journal , 1988, 16, no. 1-2, 93--109. ISSN: 0097-4943 CODEN: CMAPDK
Language: English
Document Type: Journal
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: MEDIUM (13 lines)

Summary: A study of air pollution phenomena over a large space domain by a fairly general mathematical model is discussed. The space discretization of a model leads to huge systems of ODEs. The integration algorithms used in the solution of these systems must be efficient. If a 3D model is considered, then a vector processor is to be used. Moreover, the most time-consuming parts of the code are to be vectorized. The calculated results, concentrations of different air pollutants, must be reliable, because they have to be used by other specialists. Therefore different checks concerning the reliability of the results are carried out. In this paper it is shown that an efficient and reliable code for studying both sulphur and nitrogen pollution has been developed. Some simulation processes are also described briefly." [MAT]

02187712

Title: POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL AND AIR: STATISTICAL ANALYSIS AND CLASSIFICATION BY THE SIMCA METHOD.

Author: Vogt, Nils B.; Brakstad, Frode; Thrane, Karin; Nordenson, Svein; Krane, Jostein; Aamot, Eli; Kolset, Knut; Esbensen, Kim; Steinnes, Eiliv
Corporate Source: Cent for Industrial Research, Oslo, Norw
Source: Environmental Science and Technology v 21 n 1 Jan 1987 p 35-44 Publication Year: 1987
CODEN: ESTHAG ISSN: 0013-936X
Language: ENGLISH
Document Type: JA; (Journal Article)
Treatment: G; (General Review); X; (Experimental)
Journal Announcement: 8704

Abstract: Soil samples from 12 locations in Norway have been analyzed for 9 polycyclic aromatic hydrocarbons (PAH). The same unsubstituted PAH have been determined in air samples collected near an aluminum reduction plant. Analysis by high-resolution gas chromatography-mass

spectroscopy in the selected ion mode showed concentrations in soil ranging from less than 1 ppb (detection limit) to 993 ppb for individual unsubstituted PAH. The highest concentrations are found close to aluminum plants. Correlation analysis and SIMCA pattern recognition show that the patterns of unsubstituted PAH in soil samples collected close to aluminum plants are different from those in soil samples collected from other areas. Soil samples from a bog environment show a somewhat different pattern of PAH than other soil samples. (Author abstract) 43 refs. [COM]

02693154

Title: Statistical analysis relating to recent Federal Standard 209 (cleanrooms) revisions.

Author: Cooper, Douglas W.
Corporate Source: IBM, Yorktown Heights, NY, USA
Source: Journal of Environmental Sciences v 31 n 5 Sep-Oct 1988 p 48-52
Publication Year: 1988
Language: English
Document Type: JA; (Journal Article) Treatment: T; (Theoretical)
Journal Announcement: 8901

Abstract: The recent revisions of Federal Standard 209 regarding cleanrooms include two statistical tests for the concentration data obtained from sampling airborne particles: a) that none of the location averages exceeds the Class Limit (CL) and b) that there be 95 percent confidence that the true mean of the location averages does not exceed the CL, based on the data making up the grand mean of averages. For any situation where each location has approximately the same standard deviation in its readings, the Poisson and normal distributions included, if one has 95 percent confidence that none of the locations exceeds the CL, the requirement for the grand mean is also likely to be met if five or more locations are sampled. Simulation methods can assist prediction, and several methods are summarized. (Edited author abstract) 7 refs. [COM]

02205057

Title: STATISTICAL CHARACTERISTICS OF GROUND-WATER QUALITY VARIABLES.

Author: Montgomery, Robert H.; Loftis, Jim C.; Harris, Jane Corporate Source: Woodward-Cylde Consultants, Denver, CO, USA Source: Ground Water v 25 n 2 Mar-Apr 1987 p 176-184
Publication Year: 1987
Language: ENGLISH
Document Type: JA; (Journal Article)
Treatment: G; (General Review)
Journal Announcement: 8705

Abstract: A synthesis of current literature and a statistical analysis of existing ground-water quality data were conducted. Specifically, the purpose of the study was to determine whether ground-water quality variables: (1) are normally distributed, (2) exhibit seasonal patterns, and (3) are correlated in time. The results of the investigation suggest that many ground-water quality variables: are not normally distributed, but have skewed right distributions; can exhibit seasonal fluctuations of various shapes and magnitudes, especially in shallow or highly permeable aquifers; and can exhibit significant serial correlation when samples are collected quarterly. (Edited author abstract) 17 refs. [COM]

NTIS No: PB88-169487/HDM

Title: UNAMAP: User's Network for Applied Modeling of Air Pollution, Version 6 (Revised); Model-Simulation

Performing Organization: Environmental Sciences Research Lab., Research Triangle Park, NC. Meteorology and Assessment Div.
Report No: EPA/SW/MT-88/041
Notes: Supersedes PB86-222361.; Source tape is in the ASCII character set. This restricts preparation to 9 track, one-half inch tape only. Identify recording mode by specifying density only. Call NTIS Computer Products if you have questions. Price includes 41 related documents.
Date: 4 Jan 88 Pages: mag tape NTIS Price Code: CP T99
Language: English

Abstract: UNAMAP (VERSION 6) Dated 4 Jan 88 represents the update to the Users Network for Applied Modeling of Air pollution. UNAMAP consists of an ASCII magnetic tape containing FORTRAN codes and test data for 24 Air Quality Simulation Models (AQSM) as well as associated documentation. AQSM's and supporting programs and data are arranged in seven sections: Section 1. Guideline (Appendix A) models..(file 2 through 9); Section 2. Other models or processors (New models)..(files 10 through

19 and 33); Section 3. Other models and processors (revised)..(files 20 through 27 and 32); Section 4. Additional models for regulatory use (files 28 through 31); Section 5. Added models..(file 69); Section 6. Data files..(files 34 through 39); Section 7. Output print files..(files 40 through 68 & 70). There are 70 files on the tape. [NT]

NTIS No: PB88-123955/HDM
Title: UNAMAP - User's Network for the Applied Modeling of Air Pollution; Rept. for Jul-Oct 87
Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.
Report No: EPA/600/D-87/330
Sponsoring Organization: National Oceanic and Atmospheric Administration, Washington, DC.
Notes: See also version 6, PB86-222361.; Prepared in cooperation with National Oceanic and Atmospheric Administration, Washington, DC.
Date: Oct 87 Pages: 8p NTIS Price Code: PC A02/MF A01
Language: English

Abstract: The Users' Network for the Applied Modeling of Air Pollution (UNAMAP) was initiated by EPA in 1973. It was conceived as a means of distributing air pollution models to a variety of organizations around the country. Since 1973, UNAMAP has grown from 6 models to 23 models. The report provides a brief description of the UNAMAP system. It also discusses the impact that changes in National Weather Service meteorological data will have on air pollution models. [NT]

NTIS No: PB87-145843/HDM
Title: User's Manual for Single-Source (CRSTER) Model (Addendum)
Performing Organization: Aerocomp, Inc., Costa Mesa, CA.
Report No: EPA/600/8-86/041
Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.
Notes: See also PB-271360.; Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab. Date: Jan 87 Pages: 141p NTIS Price Code: PC A07/MF A01
Language: English

Abstract: The Single Source (CRSTER) Model computes hourly concentrations of quasi-stable pollutants in rural or urban settings. The model is applicable to design, modification, and evaluation studies for New Source Review, Prevention of Significant Deterioration, other permit-related applications, and evaluations that require the mathematical simulation of effects from stack effluents of a facility. Up to nineteen collocated stacks can be considered. For various averaging times, impacts are calculated on a polar grid of one hundred eighty receptors which can be at heights other than plant grade provided no receptor exceeds the height of the lowest stack. This addendum gives model changes in conjunction with UNAMAP Version 6. New in this release is the addition of a default option for the automatic setting of variables and program switches for regulatory application of the model. [NT]

NTIS No: DE88001555/HDM

Title: Using SIR (Scientific Information Retrieval System) for Data Management During a Field Program

Performing Organization: Brookhaven National Lab., Upton, NY. Report No: BNL-40336; CONF-8710172-1

Sponsoring Organization: Department of Energy, Washington, DC. Notes: USIR annual conference, Washington, DC, USA, 14 Oct 1987.; Portions of this document are illegible in microfiche products.

Date: 1987 Pages: 14p NTIS Price Code: PC A03/MF A01

Language: English

Document Type: Conference proceeding

Abstract: As part of the US Department of Energy's program, PRocessing of Emissions by Clouds and Precipitation (PRECP), a team of scientists from four laboratories conducted a study in north central New York State, to characterize the chemical and physical processes occurring in winter storms. Sampling took place from three aircraft, two instrumented motor homes and a network of 26 surface precipitation sampling sites. Data management personnel were part of the field program, using a portable IBM PC-AT computer to enter information as it became available during the field study. Having the same database software on the field computer and on the cluster of VAX 11/785 computers in use aided database development and the transfer of data between machines. 2 refs., 3 figs., 5 tabs. (ERA citation 13:012419) [NT]

NTIS No: DE88005879/HDM

Title: Using the Oeresund Experimental Data to Evaluate the ARAC (Atmospheric Release Advisory Capability) Emergency Response Models

Performing Organization: Lawrence Livermore National Lab., CA.
Report No: UCRL-53847
Sponsoring Organization: Department of Energy, Washington, DC.
Date: 15 Dec 87
Pages: 18p NTIS Price Code: PC A03/MF A01
Language: English

Abstract: The capability of the three-dimensional MATHEW-ADPIC atmospheric transport and diffusion models to simulate pollutant dispersion in a coastal environment was evaluated by utilizing data from a series of meteorological and tracer experiments conducted across the Oeresund strait between Denmark and Sweden. These experiments, which were designed to study atmospheric dispersion processes associated with flows over cold water and warm land surfaces, included the release of a tracer from the upwind coastline. This tracer was transported over the Oeresund strait and subsequently sampled along the downwind coastline. The results of the comparisons between the simulated and the measured tracer concentrations reveal that in general the calculated maximum concentrations are higher than those measured by factors of up to 4. A statistical analysis of the individual sample comparisons indicated that approximately 50% of the comparisons are within a factor of 4. This overprediction is believed to be due to the development of a shallow stable layer over the cold water surface. 17 refs., 11 figs., 1 tab. (ERA citation 13:025024) [NT]

II B. Air-Sources

NTIS No: PB88-180021/HDM
Title: Air Quality Modeling Analysis of Industrial Point Sources in Everett, Washington; Final rept. Jun 87-Mar 88
Performing Organization: TRC Environmental Consultants, Inc., Mountainlake Terrace, WA.
Report No: EPA/910/9-87/175
Sponsoring Organization: Environmental Protection Agency, Seattle, WA. Region X.
Notes: Sponsored by Environmental Protection Agency, Seattle, WA. Region X.
Date: 2 Mar 88 Pages: 43p NTIS Price Code: PC A03/MF A01
Language: English

Abstract: The maximum allowable emissions from operating permits for Scott Paper Company and Weyerhaeuser Company pulp and paper mills in Everett, Washington were obtained from Washington Department of Ecology. A 5-year sequential meteorological data base was prepared using wind data from the Puget Sound Air Pollution Control Agency monitoring station in Everett, surface observations from Sea-Tac Airport, and upper air data from Quillayute, Washington. The mill's emissions of sulfur dioxide and particulate matter were modeled using the most recent versions of COMPLEX1, SHORTZ, and ISCST to determine: (1) if the existing monitoring site was located such that maximum concentrations are measured; and (2) if existing permit limits on emissions were sufficient to ensure compliance with State and Federal ambient air quality standards. [NT]

02506588

Title: DETERMINATION OF SOURCES OF ATMOSPHERIC AEROSOL IN COPENHAGEN BASED ON RECEPTOR MODELS.

Author: Kronberg, Dorte; Palmgren Jensen, Finn; Keiding, Kristian; Heidam, Niels Z.
Corporate Source: Univ of Copenhagen, Copenhagen, Den
Source: Atmospheric Environment v 21 n 9 1987 p 1877-1889
Publication Year: 1987
Language: ENGLISH
Document Type: JA; (Journal Article)
Treatment: T; (Theoretical); X; (Experimental)

Abstract: A statistical analysis is presented of atmospheric aerosol element composition data collected at five monitoring stations in Copenhagen in 1983. The objective is to identify sources of air pollution, to estimate the variation of total suspended particles (TSP) for the different sources and to calculate the annual average source contribution to TSP. The basis for analysis is the chemical mass balance equations. Factor analysis methods are used to identify major sources of pollution and the contribution from each of the sources to the variation in TSP is estimated by an additional multiple regression. Finally, the influence of serial correlations between daily element contributions is discussed and it is stressed that the result of the analysis is not seriously affected by these correlations. (Author abstract) 18 refs. [COM]

NTIS No: PB88-198585/HDM

Title: Development of the Fuel Choice Module in the Industrial Combustion Emissions Model, Volume 2. Phase 2

Performing Organization: Iowa Univ., Iowa City.
Report No: EPA/600/8-88/064B
Sponsoring Organization: Denver Univ., CO.; Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab. Notes: See also Volume 1, PB88-198577.; Prepared in cooperation with Denver Univ., CO. Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
Date: Apr 88 Pages: 60p NTIS Price Code: PC A04/MF A01
Language: English

Abstract: The report describes the development of a model for predicting industrial firms' choices of boiler fuel for production of process steam. In contrast to fuel choice models currently in operation, the model described here predicts fuel choices probabilistically, rather than deterministically. In addition, the model is empirical, does not assume that the costs relevant to fuel choices necessarily are best summarized by a single, total annualized cost, and provides a way to represent the effects of non-cost factors that may influence industrial boiler fuel choice decisions. These characteristics enable the model to provide a considerably more accurate description of fuel choices than do deterministic models that assume these choices to be based only on considerations of total annualized costs. The work was instrumental in developing a clearer understanding of the relative importance of the factors at work that have major influence on the industrial boiler fuel choice decision. [NT]

02755879

Title: Factor analysis in the interpretation of aerosol composition data.

Author: Negi, B. S.; Sadasivan, S.; Mishra, U. C.
Corporate Source: BARC, Bombay, India
Source: Indian Journal of Environmental Health v 30 n 1 Jan 1989 p 32-42 Publication Year: 1989
Language: English
Document Type: JA; (Journal Article)
Treatment: A; (Applications); T; (Theoretical); X; (Experimental)
Journal Announcement: 8907

Abstract: This paper presents results of factor analysis applied to large data sets consisting of elemental concentrations and total suspended particulate matter (TSPM). The reliability of the analysis was studied by (i) varying the number of factors (ii) varying the number of variables (elemental concentrations) (iii) inclusion of TSPM along with element concentrations (iv) removing very high and very low concentrations (outliers) as compared to the mean from the data set and (v) using different units (mu g/m**3 and mu g/gm) for expressing the concentrations. The results of analysis obtained under conditions mentioned above for aerosol data from a few Indian cities are also presented. (Author abstract) 14 Refs. [COM]

NTIS No: PB88-172234/HDM

Title: Industrial Combustion Emissions (ICE) Model, Version 6.0. User's Manual; Rept. for Nov 84-Aug 87

Performing Organization: Energy and Environmental Analysis, Inc., Arlington, VA.
Report No: EPA/600/8-88/007A; EPA/SW/MT-88/042A
Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
Notes: For system on magnetic tape, see PB88-172226.; Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
Date: Feb 88 Pages: 78p NTIS Price Code: PC A05/MF A01
Language: English

Abstract: The report is a user's manual for the Industrial Combustion Emissions (ICE) model. It summarizes user options and software characteristics, and describes both the input data files and procedures for operating the model. It discusses proper formatting of files and creation of job control language. The model projects for each state the emissions of sulfur oxides, sulfates, and nitrogen oxides from fossil fuel combustion in industrial boilers. Emissions and costs of boiler generation, including emission control costs, are projected for the years 1985, 1990, 1995, 2000, 2010, 2020, and 2030. [NT]

NTIS No: PB88-172226/HDM

Title: Industrial Combustion Emissions (ICE) Model, Version 6.0; Model-Simulation

Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
Report No: EPA/600/8-88/007B; EPA/SW/MT-88/042
Notes: Source tape is in the EBCDIC character set. This restricts preparation to 9 track, one-half inch tape only. Identify recording mode by specifying density only. Call NTIS Computer Products if you have questions. Price includes documentation, PB88-172234.
Date: Dec 87 Pages: mag tape NTIS Price Code: CP T11
Language: English

Abstract: The Industrial Combustion Emissions (ICE) Model was developed by the Environmental Protection Agency for use by the National Acid Precipitation Assessment Program (NAPAP) in preparing future assessments of industrial boiler emissions. The ICE Model user's manual includes a summary of user options and software characteristics, a description of the input data files, and a description of the procedures for operation of the ICE Model. Proper formatting of files and creation of job control language are discussed. The ICE Model projects for each State the sulfur dioxide, sulfates, and nitrogen oxides emissions from fossil fuel combustion in industrial boilers. Projections of emissions and costs of boiler generation, including emission control costs, are projected for the years 1985, 1990, 1995, 2000, 2010, 2020, and 2030. [NT]

02725514

Title: Model of coal dust explosion suppression by rock dust entrainment.

Author: Edwards, John C.; Ford, Kathleen M.
Corporate Source: Bur of Mines, Pittsburgh, PA, USA
Source: Report of Investigations - United States, Bureau of Mines n 9206 1988 21p
Publication Year: 1988
Language: English
Document Type: RR; (Report Review)
Treatment: L; (Literature Review/Bibliography); T; (Theoretical)
Journal Announcement: 8904

Abstract: The Bureau of Mines developed a mathematical model to calculate the aerodynamically induced lifting of coal and rock dust from a composite deposition on a mine entry floor and the subsequent transport of the dust ahead of the propagating combustion zone of a coal dust explosion. For a series of experimental explosibility tests approximated by combustion zones that expand at a constant flame velocity, the mass fraction of airborne rock dust ahead of the flame front, as well as the mass fraction overtaken by the combustion zone, was calculated. A statistical analysis of the theoretical results demonstrated with a high level of confidence that the propagating and nonpropagating test samples belonged to separate populations. This analysis was further supported by an independent model of the averagae temperature over the combustion zone. (Author abstract) 25 Refs. [COM]

NTIS No: PB88-128517/HDM

Title: National Acid Precipitation Assessment Program (NAPAP) Interim Assessment: The Causes and Effects of Acidic Deposition

Performing Organization: National Acid Precipitation Assessment Program, Washington, DC.

Notes: Set includes PB88-128525 through PB88-128558.

Date: 1987 Pages: 946p-in 4v NTIS Price Code: PC E99

Language: English

Abstract: No abstract available.

[NT]

NTIS No: PB88-128525/HDM

Title: National Acid Precipitation Assessment Program (NAPAP) Interim Assessment: The Causes and Effects of Acidic Deposition. Volume 1. Executive Summary

Performing Organization: National Acid Precipitation Assessment Program, Washington, DC.

Notes: See also Volume 2, PB88-128533. Also available from Supt. of Docs.; Also available in set of 4 reports PC E99, PB88-128517.

Date: 1987 Pages: 114p NTIS Price Code: PC A06/MF A01

Language: English

Abstract: A synopsis of the material covered in the technical volumes of the NAPAP Interim Assessment. Includes major conclusions from research in the substantive areas of current and historical emissions, control technologies, future emissions, atmospheric processes, acidic deposition and air quality, crop effects, forest effects, effects on aquatic systems, effects on materials, and effects on human health and visibility. Also discusses the NAPAP organizational structure, its history, and role in the understanding of the acidic deposition phenomenon. [NT]

NTIS No: PB88-128533/HDM

Title: National Acid Precipitation Assessment Program (NAPAP) Interim Assessment: The Causes and Effects of Acidic Deposition. Volume 2. Emissions and Control

Performing Organization: National Acid Precipitation Assessment Program, Washington, DC.

Notes: See also Volume 1, PB88-128525 and Volume 3, PB88-128541. Also available from Supt. of Docs.; Also available in set of 4 reports PC E99, PB88-128517.

Date: 1987 Pages: 247p NTIS Price Code: PC A11/MF A01

Language: English

Abstract: The volume on Emissions and Controls is the second in a four volume set which comprises the NAPAP Interim Assessment. It contains three chapters, (1) 'Historical Emissions,' (2) 'Emission Control Technologies,' and (3) 'Future Emissions.' Volume III, Atmospheric Processes and Deposition, contains chapters on (4) 'Atmospheric Processes,' and (5) 'Acidic Deposition and Air Quality.' The last volume, entitled, Effects of Acidic Deposition, covers (6) 'Agricultural Crops,' (7) 'Forests,' (8) 'Aquatics Systems,' (9) 'Materials,' and (10) 'Human Health and Visibility.' Each of these chapters describes the National Program's research orientation and major conclusions within each of the ten primary areas of substantive concern. In order to learn how these first-order conclusions relate to the issue of acidic deposition in an overall, or synoptic, sense, the reader is directed to Volume I, Executive Summary, where the conclusions from each of the ten chapters are distilled in a manner which will allow interested parties to quickly reference the status of a variety of factors that pertain to the scientific understanding of acidic deposition. [NT]

NTIS No: PB88-128541/HDM

Title: National Acid Precipitation Assessment Program (NAPAP) Interim Assessment: The Causes and Effects of Acidic Deposition. Volume 3. Atmospheric Processes
Performing Organization: National Acid Precipitation Assessment Program, Washington, DC.
Notes: See also Volume 2, PB88-128533 and Volume 4, PB88-128558. Also available from Supt. of Docs.; Also available in set of 4 reports PC E99, PB88-128517.
Date: 1987 Pages: 222p NTIS Price Code: PC A10/MF A01
Language: English

Abstract: The volume on Atmospheric Processes and Deposition is the third in a four volume set which comprises the NAPAP Interim Assessment. It contains two chapters dealing with (4) 'Atmospheric Processes,' and (5) 'Acidic Deposition and Air Quality.' Volume II, Emissions and Controls, contains chapters on (1) 'Historical Emissions,' (2) 'Emission Control Technologies,' and (3) 'Future Emissions.' Volume IV, Effects of Acidic Deposition, contains chapters on (6) 'Agricultural Crops,' (7) 'Forests,' (8) 'Aquatic Systems,' (9) 'Materials,' and (10) 'Human Health and Visibility.' Each of these chapters describes the National Program's research orientation and major conclusions within each of the ten primary areas of substantive concern. In order to learn how these first-order conclusions relate to the issue of acidic deposition in an overall, or synoptic, sense the reader is directed to Volume I, Executive Summary and Major Conclusions, where the conclusions from each of the ten chapters are distilled in a manner which will allow interested parties to quickly reference the status of a variety of factors that pertain to the scientific understanding of acidic deposition. [NT]

NTIS No: PB88-128558/HDM

Title: National Acid Precipitation Assessment Program (NAPAP) Interim Assessment: The Causes and Effects of Acidic Deposition. Volume 4. Effects of Acidic Deposition
Performing Organization: National Acid Precipitation Assessment Program, Washington, DC.
Notes: See also Volume 3, PB88-128541. Also available from Supt. of Docs.; Also available in set of 4 reports PC E99, PB88-128517.
Date: 1987 Pages: 363p NTIS Price Code: PC A16/MF A01
Language: English

Abstract: The volume on Effects of Acidic Deposition is the last in a four volume set which comprises the NAPAP Interim Assessment. It contains five individual chapters covering (6) 'Agricultural Crops,' (7) 'Forests,' (8) 'Aquatic Systems,' (9) 'Materials,' and (10) 'Human Health and Visibility.' Volume III, Atmospheric Processes and Deposition, has two chapters on (4) 'Atmospheric Processes,' and (5) 'Acidic Deposition and Air Quality.' Volume II, Emissions and Controls, contains three chapters on (1) 'Historical Emissions,' (2) 'Emission Control Technologies,' and (3) 'Future Emissions.' Each of these chapters describes the National Program's research orientation and major conclusions within each of the ten primary areas of substantive concern. In order to learn how these first-order conclusions relate to the issue of acidic deposition in an overall, or synoptic, sense, the reader is directed to Volume I, Executive Summary, where the conclusions from each of the ten subject chapters are distilled in a manner which will allow interested parties to quickly reference the status of a variety of factors that pertain to the scientific understanding of acidic deposition. [NT]

NTIS No: PB88-211941/HDM
Title: Revision of the Industrial Combustion Emissions Model to a Base Year of 1980; Final rept. Mar-Sep 85
Performing Organization: Energy and Environmental Analysis, Inc., Arlington, VA.
Report No: EPA/600/8-88/078
Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
Notes: Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.
Date: May 88 Pages: 19p NTIS Price Code: PC A03/MF A01
Language: English

Abstract: The report describes the development of an updated 1980 base year fuel consumption and air pollution emissions estimates data base by state. These 1980 base year data have been incorporated into industrial combustion emissions (ICE) model Versions 4.0, 5.0, and 6.0. The model is one of four stationary source emission and control cost forecasting models developed by EPA's Air and Energy Engineering Research Laboratory. It projects air pollution emissions (SO2, sulfates, NOx, and particulate matter), costs, and fuel mix for industrial fossil-fuel-fired (natural gas, distillate and residual fuel oil, and coal) boilers by state and year (1980 baseline, 1985, 1990, 1995, 2000, 2010, 2020, and 2030). Model Version 6.0 is available for remote terminal access and operation at EPA's National Computer Center. [NT]

NTIS No: PB87-141461/HDM

Title: Stability of Parts-Per-Million Organic Cylinder Gases and Results of Source Test Analysis Audits: Status Report 8

Performing Organization: Research Triangle Inst., Research Triangle Park, NC.

Report No: EPA/600/2-86/117

Sponsoring Organization: Environmental Monitoring Systems Lab., Research Triangle Park, NC.

Notes: See also PB86-144656.; Sponsored by Environmental Monitoring Systems Lab., Research Triangle Park, NC.

Date: Jan 87 Pages: 93p NTIS Price Code: PC A05/MF A01

Language: English

Abstract: A repository of 45 gaseous compounds including hydrocarbons, halocarbon, and sulfur species has been established under contract with the U.S. Environmental Protection Agency (USEPA). The main objectives of this on-going project are (1) to provide gas mixtures to EPA, state/local agencies, or their contractors, as performance audits to assess the accuracy of source emission measurements in certain organic chemical manufacturing industries, (2) to corroborate the vendor's certified analysis of the gas mixtures by in-house analysis, (3) to determine the stability of the gas mixtures with time by in-house analysis, and (4) to explore the feasibility of new audit materials as requested by EPA. [NT]

0197539

STATISTICAL ANALYSIS OF GASEOUS AIR POLLUTANT CONCENTRATIONS AT URBAN, RURAL AND MOTORWAY LOCATIONS,

CLARK A. I. DAMES & MOORE, UK, ; MCINTYRE A. E. ; REYNOLDS G. L. ; KIRK P. W. ; LESTER J. N. ; PERRY R.

ENV TECHNOLOGY LETTERS, NOV 88, V9, N11, P1303(10)

RESEARCH ARTICLE

MEASUREMENTS OF MOTOR VEHICLE-RELATED AIR POLLUTANTS WERE MADE AT THREE UK SITES OF CONTRASTING DEGREES OF TRAFFIC INFLUENCE. SULFUR DIOXIDE, NITROGEN OXIDES, CARBON MONOXIDE, HYDROCARBONS, AND OZONE DATA COLLECTED AT AN URBAN, A RURAL, AND A HIGHWAY SITE WERE LOG-NORMALLY DISTRIBUTED. MULTIPLE REGRESSION ANALYSIS DEMONSTRATED SIGNIFICANT AUTOCORRELATION WITHIN THE DATA. SIGNIFICANTLY HIGHER O3 CONCENTRATIONS WERE RECORDED AT THE RURAL LOCATION THAN AT THE OTHER TWO SITES; CO, NOX, AND HYDROCARBONS WERE ELEVATED AT THE URBAN AND HIGHWAY

SITES, WHILE SIMILAR SO2 CONCENTRATIONS WERE RECORDED AT ALL SITES. (13 REFERENCES, 6 TABLES) [ENV]

NTIS No: PB89-134712/HDM

Title: Target Transformation Factor Analysis as an Aerosol Mass Apportionment Method: A Review and Sensitivity Study (Journal Version)

Performing Organization: Illinois Univ. at Urbana-Champaign. Inst. for Environmental Studies.

Report No: EPA/600/J-88/213

Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.

Notes: Pub. in Atmospheric Environment, v22 n9 p1777-1792 1988.; Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.

Date: c1988 Pages: 19p NTIS Price Code: PC A03/MF A01

Language: English

Document Type: Journal article

Abstract: Over the past several years, a multivariate receptor model called Target Transformation Factor Analysis (TTFA) has been applied to various problems of environmental source resolution. In recent reports on the analysis of data sets with known structure, good results were obtained. In order to further test the TTFA approach, additional simulated data sets have been created with varying degrees of collinearity of the source profiles and normally distributed uncertainty. The effect of the collinearity is to restrict the number of resolvable sources. The analytical error affects the identification of the number of sources and development of accurate profiles. (Copyright (c) 1988 Pergamon Press.) [NT]

NTIS No: PB88-157888/HDM

Title: Volatile Organic Compound Model (Version 1.8) (for Microcomputers); Software

Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.

Report No: EPA/600/8-87/059B; EPA/SW/DK-88/038

Notes: The software is contained on 5 1/4-inch diskette, double sided, double density compatible with the IBM PC/XT/AT microcomputer. Diskettes are in the ASCII format. Price includes documentation, PB88-157896.

Date: 1988 Pages: 3 diskettes NTIS Price Code: CP D99

Language: English

Abstract: Future emissions of volatile organic compounds (VOCs) and costs of their control can be estimated by applying growth factors, emission constraints, control cost functions, and capacity retirement rates to the base line estimates of VOC emissions and industrial VOC source capacity in 1980. A personal computer model has been developed by the U.S. EPA to automate the forecasting procedure. The report provides guidelines for installing and operating the volatile organic compound model (VOCM) on an IBM-PC or IBM-PC compatible computer. The report describes how a VOCM user can create his own data files or use those supplied with VOCM for preparing forecasts..Software Description: The software was programmed using the PC-PASQUAL Language for implementation on the IBM-PC, XT, AT computers using the DOS 3.1 operating system and 320 K bytes memory. [NT]

NTIS No: PB88-157896/HDM

Title: Volatile Organic Compound Emission Projection Model (Version 1.8). User's Manual; Final rept.

Performing Organization: Radian Corp., Research Triangle Park, NC.

Report No: EPA/600/8-87/059A; EPA/SW/DK-88/038A

Sponsoring Organization: Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.

Notes: For system on diskette, see PB88-157888.; Sponsored by Environmental Protection Agency, Research Triangle Park, NC. Air and Energy Engineering Research Lab.

Date: Dec 87 Pages: 95p NTIS Price Code: PC A05/MF A01

Language: English

Abstract: The report discusses a model that can be used to estimate future emissions of volatile organic compounds (VOCs) and costs of their control by applying growth factors, emission constraints, control cost functions, and capacity retirement rates to the base line estimates of VOC emissions and industrial VOC source capacity in 1980. A personal computer model has been developed to automate the forecasting procedure. The report provides guidelines for installing and operating the Volatile Organic Compound Model (VOCM) on an IBM-PC or IBM compatible computer. The report describes the creation of data files by a VOCM user and the use of data files supplied with the VOCM for preparing forecasts.

02768499

Title: Use of the GMDH for rapid estimation of air dust pollution during mining operations.

Author: Kozubovskiy, S. F.; Kupriyanov, V. V.
Corporate Source: Ukrainian SSR Acad of Sciences, Kiev, USSR Source: Soviet Journal of Automation and Information Sciences (English translation of Avtomatyka) v 21 n 3 May-Jun 1988 p 73-76
Publication Year: 1988
Language: English
Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical)
Journal Announcement: 8908

Abstract: The paper considers use of the GMDH to develop methods of fast determination of the dust content of harmful substances in air. GMDH algorithms making use of the regularity criterion are implemented on a computer. A new effect is established of spatial pulsation of dust components of harmful substances in air during mining operations. Use is made of this effect to determine the optimum values of the coefficients of qualitative dust content. By means of self-organization methods the limiting combined dust norms have been found for the first time. (Author abstract) 3 Refs. [COM]

II C. Air-Abatement

0199187

GRID MAP: AN AID IN ELIMINATION OF AIR CONTAMINANTS IN WORKPLACES,

ROSEN GUNNAR AND ; ANDERSON ING-MARIE NATL INST OF OCCUPATIONAL HEALTH, SWEDEN,

APPLIED INDUSTRIAL HYGIENE, FEB 89, V4, N2, P32(7)

RESEARCH ARTICLE A METHOD IS PRESENTED FOR COLLECTING AND PROCESSING DATA FROM CONCENTRATION MEASUREMENTS OF AIRBORNE POLLUTANTS. A DIRECT READING INSTRUMENT IS USED TO MONITOR POLLUTANT LEVELS AT AN ARRAYED NUMBER OF POINTS IN A WORKROOM. THE DATA IS PROCESSED WITH THE AID OF A COMPUTER PROGRAM WHICH UTILIZES SPLINE FUNCTIONS TO INTERPOLATE BETWEEN DATA POINTS. A GRID MAP OF POLLUTANT LEVELS IN THE ROOM IS GENERATED. THE METHOD HAS BEEN SUCCESSFULLY APPLIED TO INDENTIFY THE SOURCE OF SOLVENT EMISSION IN A SURFACE FINISHING DEPARTMENT OF A FURNITURE FACTORY. (7 DIAGRAMS, 3 REFERENCES, 1 TABLE) [ENV]

02695459

Title: On the regulation of municipal solid waste resource recovery incinerators.

Author: Jones, Kay H.; Walsh, James
Corporate Source: Roy F. Weston Inc, Seattle, WA, USA
Source: Risk Analysis v 8 n 3 Sep 1988 p 379-382
Publication Year: 1988
CODEN: RIANDF ISSN: 0272-4332
Language: English
Document Type: JA; (Journal Article)
Treatment: G; (General Review)
Journal Announcement: 8901

Abstract: On the basis of risk analysis, the EPA has proposed that acid gas and particulate control technology be included on all new MSW/RDF-fired resource recovery incinerators built in the United States. Although scrubbers reduce acid gas emissions, it has never been demonstrated that such reductions are needed to protect health. The authors believe that the EPA's analysis leads to the incorrect conclusion that scrubbers are necessary on new incinerators. They present an alternative assessment. The authors believe that the most likely technology-by-technology emission factors, and the geometric mean or average of any other correction factors applied should be employed to assess relative nationwide annual cancer risks. When appropriate statistical analysis of the emissions data is used, a wholly different risk picture emerges than that presented by the EPA. The authors recommend that the EPA focus on strategies to phase out the older, high-emitting facilities, if they feel that some regulatory strategy is needed. 5 refs. [COM]

86-06968

Seminar summary incinerator emissions of heavy metals and particulates

Hansen, J.A.
Environ. Eng. Lab., Univ. Aalborg, Sohngardsholmsvej 57, 9000 Aalborg, Denmark
ISWA Specialized Seminar on Incinerator Emissions on Heavy Metals and Particulates Copenhagen (Denmark) 18-19 Sep 1985
WASTE MANAGE. RES VOL. 4, NO. 1, pp. 121-125,
Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

It was the intention of this specialized seminar to present recent developments and experimental statistical or theoretical results regarding emission of particles and heavy metals from municipal solid waste incinerators. The limited scope was to secure a qualified, in-depth discussion and achieve two results: firstly, a state-of-the-art assessment on emissions of heavy metals and particulates, as well as their correlation to plant operation; secondly, a realistic base of data to be used for environmental and health risk analysis, and formulation of operational strategies and procedures for emission control on a statistical basis. The attendance was pre-limited to 60 particpants, including authors and organizers. The programme is shown in the Annex. [PA]

02638108

Title: STATISTICAL ASSESSMENT OF PCDD AND PCDF EMISSION DATA.

Author: Pallesen, Lars
Corporate Source: Technical Univ of Denmark, Lyngby, Den Source: Waste Management & Research v 5 n 3 Sep 1987 p 367-379 Publication Year: 1987
Language: English
Document Type: JA; (Journal Article)
Treatment: A; (Applications); G; (General Review); X; (Experimental)
Journal Announcement: 8809

Abstract: Real PCDD and PCDF emission data from a statistically planned measurement programme at Amagerforbraending, Copenhagen, 1985 are analyzed. It is demonstrated how statistical analysis of variance can be used to break down the total variability in the data into interpretable components. Crossed and nested data structures are considered. Emission differences over time are significant, but less so than differences due to alternative sample taking methods, and even greater differences were found between laboratories. (Author abstract) 6 refs.
[COM]

II D. Air-Impact

02746446
Title: Analysis of visual range in the Eastern United States under different meteorological regimes.
Author: Zannetti, Paolo; Tombach, Ivar H.; Cvencek, Slavko J. Corporate Source: AeroVironment Inc, Monrovia, CA, USA
Source: JAPCA (Journal of the Air Pollution Control Association) v 39 n 2 Feb 1989 p 200-203
Publication Year: 1989
Language: English
Document Type: JA; (Journal Article)
Treatment: G; (General Review); T; (Theoretical); X; (Experimental)
Journal Announcement: 8906

Abstract: Atmospheric visibility depends on the emissions of pollutants into the atmosphere and on the meteorological conditions in that atmosphere. To illuminate the relationship between visibility and meteorology, we present, in this technical note, a simple statistical analysis of visual range measurements in urban and rural areas of the eastern United States under different meteorological conditions. The eastern United States was divided into four areas. Eight subregions were produced when the four areas above were subdivided into urban and rural sections. Visibility data collected at airports were used. Days with high relative humidity are characterized by the lowest visual range. The 'continental' meteorological regimes are associated with higher visual ranges, while 'maritime' conditions have lower visual range. Coastal regions generally have higher visual ranges than central regions. 10 Refs. [COM]

NTIS No: PB88-185178/HDM

Title: Effects of Daily Ozone Exposure Duration and Concentration Fluctuation on Yield of Tobacco; Journal article

Performing Organization: North Carolina State Univ. at Raleigh. Report No: EPA/600/J-87/290

Sponsoring Organization: Agricultural Research Service, Beltsville, MD.; Corvallis Environmental Research Lab., OR.

Notes: Pub. in American Phytopathological Society, v77 n6 p856-862 1987.; Prepared in cooperation with Agricultural Research Service, Beltsville, MD. Sponsored by Corvallis Environmental Research Lab., OR.

Date: c1987 Pages: 9p NTIS Price Code: PC A02/MF A01

Language: English

Document Type: Journal article

Abstract: Flue-cured tobacco (Nicotiana tabacum McNair 944) was exposed to chronic doses of ozone (O3) in open-top field chambers to determine the influence of frequency and magnitude of peak O3 concentrations and daily exposure duration on tobacco yield response. The treatments were established by adding O3 in amounts that were proportional to ambient O3 concentrations or in constant amounts. The frequency of occurrence and level of peak O3 concentrations were greater for each proportional-addition treatment than for the corresponding constant-addition treatments. However, the seasonal mean O3 concentrations were nearly identical, and the yield response to O3 was similar for both types of O3 for 12 hr/day (1000 to 2200 hours EDT) was 10% less (three treatment levels combined) than in those receiving proportional addition for 7 hr/day (1000 to 1700 hours EDT). If other important crop species have a similar response to O3 late in the afternoon, previous national crop loss estimates based on seasonal 7 hr/day O3 exposures may be low. [NT]

0199150

GREENHOUSE WARMING: SEARCHING FOR THE FACTS,

DANIEL R. EDREA

ENV VIEWS, DEC 88, V11, N3, P16(5)

JOURNAL ARTICLE THE RECORD HIGH TEMPERATURES AND DROUGHT IN NORTH AMERICA IN 1988 POINT TO ATMOSPHERIC WARMING, BUT SCIENTISTS DISAGREE ABOUT ACTUAL CAUSES AND TREND PREDICTIONS. ONE NASA SCIENTIST CLAIMS THAT THE GLOBAL WARMING IS OCCURING NOW, WITH AN INCREASE OF 0.7 DEGREE DURING THE PAST CENTURY. STUDIES OF CLIMATE TRENDS CONSIDER HISTORICAL DATA FROM ICE CORES AND PROXY DATA WHICH IS INFERRED FROM TREE RINGS, SEDIMENTS, ETC. COMPUTERIZED SIMULATIONS OF CARBON DIOXIDE INDUCED WARMING DEAL WITH COMPLEX ATMOSPHERIC INTERACTIONS. (1 DRAWING, 1 GRAPH, 4 PHOTOS) [ENV]

02588440

Title: MICROCOMPUTER-BASED SYSTEM TO MEASURE, RECORD AND PROCESS FLOW-VOLUME CURVES, RESPIRATORY QUESTIONNAIRE DATA AND ENVIRONMENTAL EXPOSURE.

Author: El-Dhaher, A. H. G.; Mustafa, K. Y.; Abu-Irhayem, F. D. Corporate Source: Kuwait Univ, Kuwait
Source: Computer Methods and Programs in Biomedicine v 26 n 1 Jan-Feb 1988 p 63-70
Publication Year: 1988
Language: English
Document Type: JA; (Journal Article)
Treatment: A; (Applications); G; (General Review)
Journal Announcement: 8806

Abstract: A microcomputer-based system was developed to measure flow-volume curve parameters, record respiratory questionnaire data and analyze the collected data. The hardware of the system consists of two parts which operate independently and are linked together for data transfer. The first part is a microprocessor-based unit to accurately measure flow-volume curve parameters. The second part is a microcomputer unit used to receive flow-volume curve parameters from the first part, to record responses to questionnaires stored in the unit and to perform all statistical analysis. The software included a monitor program controlling system operations, a data base and a powerful statistical package. Two sets of questionnaires are stored in the system, one for adults and the other for children. (Edited author abstract) 20 refs. [COM]

02780917

Title: On the water quality of the river Rhine near Dusseldorf.
Title: Zur Wasserqualitaet des Rheins bei Duesseldorf.

Author: Gerike, Peter; Winkler, Kurt; Schneider, Walter; Jakob, Werner
Source: Tenside, Surfactants, Detergents v 26 n 1 Jan-Feb 1989 p 21-26
Publication Year: 1989
Language: German
Document Type: JA; (Journal Article)
Treatment: G; (General Review); X; (Experimental)

Abstract: Water samples are drawn from the river Rhine every week and analyzed for oxygen, organic carbon, anionic and nonionic surfactants, chloride, borate and total and o-phosphate. The data, some of which have been elaborated since 1958, were worked up with the software package 'Statistical Analysis System'. Because of the high data density, dependable conclusions with respect to trends and mass balances may be drawn. It could be shown that in the past years the oxygen concentration has increased and the loads of organic carbon and anionic and non-ionic surfactants have decreased. Of the inorganic parameters, chloride and borate are stagnant while phosphate has decreased considerably. Altogether water quality has improved to an essential extent. (Author abstract) 38 Refs. In German. [COM]

1939273

Simulation and stability analysis for parameter dependent 2-dimensional models of air polluted forests.

Mathematical modelling in science and technology (St. Louis, MO, 1987).
Metzler, Wolfgang (FB Mathematik, Gesamthochschule (GHS) Kassel, 3500 Kassel, Federal Republic of Germany)
Gockert, Dieter (FB Mathematik, Gesamthochschule (GHS) Kassel, 3500 Kassel, Federal Republic of Germany)
(Metzler, Wolfgang2)
Corporate Source Codes: D-KSSL; D-KSSL
Mathematical and Computer Modelling, 1988, 11, 493--498.
Language: English
Document Type: Journal
Subfile: CMP (Current Mathematical Publications) AMS
Type of Abstract: No review planned
[MAT]

NTIS No: DE88012934/HDM

Title: Statistical Study of the Macroepidemiology of Air Pollution and Total Mortality

Performing Organization: Brookhaven National Lab., Upton, NY. Report No: BNL-52122
Sponsoring Organization: Department of Energy, Washington, DC.
Notes: Portions of this document are illegible in microfiche products.
Date: Apr 88 Pages: 143p NTIS Price Code: PC A07/MF A01
Language: English

Abstract: A statistical analysis of spatial patterns of 1980 US urban total mortality (all causes) was performed, evaluating demographic, socioeconomic and air pollution factors as predictors. Specific mortality predictors included cigarette smoking, drinking water hardness, heating fuel use, and 1978-1982 annual concentrations of the following air pollutants: ozone, carbon monoxide, sulfate aerosol, particulate concentrations of lead, iron, cadmium, manganese, vanadium, as well as total and fine particle mass concentrations from the inhalable particulate network (dichotomous samplers). In addition, estimates of sulfur dioxide, oxides of nitrogen, and sulfate aerosol were made for each city using the ASTRAP long-range transport diffusion model, and entered into the analysis as independent variables. Because the number of cities with valid air quality and water hardness data varied considerably by pollutant, it was necessary to consider several different data sets, ranging from 48 to 952 cities. The relatively strong associations (ca. 5--10%) shown for 1980 pollution with 1980 total mortality are generally not confirmed by independent studies, for example, in Europe. In addition, the US studies did not find those pollutants with known adverse health effects at the concentrations in question (such as ozone or CO) to be associated with mortality. The question of causality vs. circumstantial association must therefore be regarded as still unresolved. 59 refs., 20 figs., 40 tabs. (ERA citation 13:041161) [NT]

II E. Air-Monitoring

NTIS No: PB88-191424/HDM

Title: Computer Data Base from EPA's (Environmental Protection Agency's) Complex Terrain Field Studies. Description of a SAS (Statistical Analysis System) Computer Data Base from Tracer Field Studies at Cinder Cone Butte, Idaho; Hogback Ridge, New Mexico; and the Tracy Power Plant, Nevada; Final rept.

Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Atmospheric Sciences Research Lab.
Report No: EPA/600/8-88/067
Date: Apr 88 Pages: 176p NTIS Price Code: PC A09/MF A01
Language: English

Abstract: As part of EPA's effort to develop and demonstrate a reliable model of atmospheric dispersion in mountainous terrain, the Complex Terrain Model Development Program was initiated. Three tracer field studies were designed to test model estimates of plume impaction with observed tracer concentration. The first study was conducted at Cinder Cone Butte, Idaho; the second at the Tracy Power Plant, Nevada. The report describes a special computer data base that uses SAS (Statistical Analysis System) software to store meteorological and tracer gas data from the three tracer field studies. Using the self-documentation feature of SAS data sets, data variables can be quickly inspected and acquired for SAS software programming. Tables give a complete listing of all data variables along with a short descriptive label. [NT]

88-04568

The concentration and deposition of nitrate, sulfate and ammonium as a function of wind direction from precipitation samples

Sperber, K.R.
Lab. Planetary Atmos. Res. and Dep. Mech. Eng., State Univ. New York, Stony Brook, NY 11794, USA
ATMOS. ENVIRON VOL. 21, NO. 12, pp. 2629-2641, Publ.Yr: 1987
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

The log sub(e) concentrations of nitrate, sulfate and ammonium are normally distributed. The t-test (using the log sub(e) transformed data) indicates the mean concentration of nitrate and sulfate in hourly precipitation samples, obtained at Brookhaven National Laboratory on Long Island, east of the New York Metropolitan region, to be greatest when associated hourly averaged wind direction is from the southwest, west and northwest regions. Ammonium concentration is significantly greater when winds are from the southwest and west. Nitrate deposition is significantly greater when winds are from the southwest and west. [PA]

02325781 E.I. Monthly No: EI8711116444
Title: DISTINGUISHING BETWEEN HEALTHY AND SICK PRESCHOOLS BY CHEMICAL CLASSIFICATION.
Author: Baird, John C.; Berglund, Birgitta; Berglund, Ulf; Nicander-Bredberg, Helene; Noma, Elliot
Corporate Source: Dartmouth Coll, Hanover, NH, USA
Source: Environment International v 13 n 2 1987 p 167-174
Publication Year: 1987
Language: ENGLISH
Document Type: JA; (Journal Article)
Treatment: A; (Applications); X; (Experimental)
Journal Announcement: 8711

Abstract: This article outlines an approach designed to find sets of chemicals that can be used to separate buildings according to their designation as sick and healthy. Air samples were taken from a healthy and sick preschool and subsequently analyzed by gas chromatography. The prevalence of different chemical substances was determined and compared across 16 different locations from which air samples were obtained, including outdoor, supply, room, and exhaust air. In all, 158 different chemical substances were found; more in the healthy buildings in the sick one. Cluster analysis, based on the pattern of presence and absence of chemicals, was able to separate locations within and between the two types of building. The ten most critical chemicals in this respect were subjected to more complete statistical analysis in order to highlight further possible differences between the buildings. (Edited author abstract) 23 refs. [COM]

88-04696

An eddy correlation technique with extended applicability to non-simple terrain

McMillen, R.T.

NOAA, Environ. Res. Lab., Air Resour. Lab., Atmos. Turbul. and Diffus. Div., Oak Ridge, TN 37831, USA

BOUNDARY-LAYER METEOROL VOL. 43, NO. 3, pp. 231-245, Publ.Yr: 1988

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V19N4

A system is described which is intended to calculate vertical fluxes of heat, moisture, momentum, and certain atmospheric pollutants at sites that are less than ideal. Fluxes, along with other turbulence statistics, are computed in real-time and printed at end of each averaging period. The main elements of the program are (1) "detrending" (by use of running mean removal), (2) calculation of the entire stress tensor (which allows a three-dimensional coordinate rotation to be performed on the covariance), (3) software-adjustable timing delays for each instrument channel, and (4) real-time graphic presentation of the raw data as stripchart images. The first two of these program elements tend to relax the normal site and sensor-leveling requirements. Sample results are presented, and the sensitivities of the calculated quantities to coordinate rotation and to mean removal time are examined for both ideal and non-ideal sites. [PA]

02298353 E.I. Monthly No: EI8708076338

Title: INHALABLE URBAN ATMOSPHERIC PARTICULATE MATTER IN A SEMI-ARID CLIMATE: THE CASE OF SANTIAGO DE CHILE.

Author: Trier, A.; Silva, C.

Corporate Source: Univ de Santiago de Chile, Santiago, Chile Source: Atmospheric Environment v 21 n 4 1987 p 977-983

Publication Year: 1987

Language: ENGLISH

Document Type: JA; (Journal Article)

Treatment: A; (Applications); G; (General Review); X; (Experimental)

Journal Announcement: 8708

Abstract: Dichotomous sampling of inhalable particulate matter (IPM) has been conducted at a fixed station on the Universidad de Santiago de Chile (USACH) campus from October 1981 to March 1983. Information on the IPM component of urban air pollution in Santiago by particle sizing sampling methods was not previously available, nor had XRF spectrometry been applied to local IPM samples. A multivariate statistical analysis of the body of data comprising sample masses and XRF elemental intensities is presented and discussed. The group of elements Al, Si, K, Ca, Ti and Fe shows strong statistical correlations in the coarse particle fraction; correlations in the fine particle fraction include Br/Pb. Evidence for seasonal variations in the air pollution pattern is presented. Pollution by sulfur is discussed. (Edited author abstract) 16 refs. [COM]

02208860

Title: Limits of Soot Mass Determination from Optical Transmission Measurements.

Title: GRENZEN DER RUSSMASSENBESTIMMUNG AUS OPTISCHEN TRANSMISSIONSMESSUNGEN.

Author: Hardenberg, Horst; Albrecht, Hans
Source: MTZ Motortechnische Zeitschrift v 48 n 2 Feb 1987 p 51-54
Publication Year: 1987
CODEN: MOTZAS ISSN: 0024-8525
Language: GERMAN
Document Type: JA; (Journal Article)
Treatment: G; (General Review)
Journal Announcement: 8706

Abstract: Exhaust gas opacities established by means of optical transmission measurements should not be converted into soot mass emission units as is often done. Due to modification of the measuring equipment, which meanwhile has taken place, the so-called MIRA conversion from Hartridge units into particulate concentrations must only be applied after corresponding corrections of the - anyway impractical - conversion tables. Based on the statistical analysis of the measurement data, an accordingly corrected conversion formula is established which also defines the scatter to be taken into account with a 5% probability of error. (Edited author abstract) 14 refs. In German. [COM]

02299334

Title: ON THE STATISTICAL ANALYSIS OF AMBIENT OZONE DATA WHEN MEASUREMENTS ARE MISSING.

Author: Davison, A. C.; Hemphill, M. W.
Corporate Source: Univ of Texas at Austin, TX, USA
Source: Atmospheric Environment v 21 n 3 1987 p 629-639
Publication Year: 1987
Language: ENGLISH
Document Type: JA; (Journal Article)
Treatment: A; (Applications); X; (Experimental)
Journal Announcement: 8708

Abstract: Two methods are proposed to deal with missing observations, which frequently pose problems in the statistical analysis of ambient ozone data. The first is based on exceedances of the data over thresholds and provides a flexible and general class of models for statistical analysis of air pollution data. The second uses the measured values of related variables to impute missing observations. They are applied to data for three sites in E Texas. (Author abstract) 17 refs. [COM]

87-06151

A random-walk model for dispersion of heavy particles in turbulent air flow

Walklate, P.J.
Rothamsted Exp. Stn., Harpenden, Herts. AL5 2JQ, UK
BOUNDARY-LAYER METEOROL VOL. 39, NO. 1-2, pp. 175-190, Publ.Yr: 1987 SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH
Journal Announcement: V18N5

A random-walk model is presented for calculating the dispersion of heavy particles in a turbulent air flow when only air turbulence statistics and the drag characteristics of the particle are known. Algebraic expressions for the modification of air velocity variance sigma super(2) and Lagrangian autocorrelation time-scale T sub(L), due to particle inertia effects, are derived. These expressions introduce only a very small computational overhead on the random-walk models for inertia-less particles of Wilson et al. (1983). Measurements of T sub(L) and sigma by Snyder and Lumley (1971) for four different particles are used to determine constants in the heavy-particle model. It is shown that the agreement between the model, for a single set of constants, and the dispersion measurements is good for the 47 mu m hollow glass, 87 mu m glass, and 47 mu m copper particles. The predictions for the 87 mu m corn pollen particles show less satisfactory agreement by underestimating dispersion measurements by 15% after 0.4 s. [PA]

NTIS No: PB89-151070/HDM
Title: RVD 2.0-A Relief Valve Discharge Screening Model. User's Guide
Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.
Report No: EPA/450/4-88/024; EPA/SW/DK-89/014A
Notes: For system on diskette, see PB89-151062.
Date: Jan 89 Pages: 58p NTIS Price Code: PC A04/MF A01
Language: English

Abstract: The document is the user's guide for RVD 2.0, a personal computer model which provides estimates of short-term ambient concentrations for screening pollution sources which emit denser-than-air gases through vertical releases. The code is based on empirical equations derived from wind tunnel tests. The user's guide describes the bases, features, applicability and limitations of the model, and provides two example runs of the model for illustrative purposes and benchmark testing. [NT]

89-00472
Statistical methods and sampling design for estimating step trends in surface-water quality
Hirsch, R.M.
U.S. Geol. Surv., 410 National Center, Reston, VA 22090, USA WATER RESOUR. BULL VOL. 24, NO. 3, pp. 493-503, Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH
Journal Announcement: V20N1

This paper addresses two components of the problem of estimating the magnitude of step trends in surface water quality. The first is finding a robust estimator appropriate to the data characteristics expected in water-quality time series. The Hodges-Lehmann class of estimators is found to be robust in comparison to other nonparametric and moment-based estimators. A seasonal Hodges-Lehmann estimator is developed and shown to have desirable properties. Second, the effectiveness of various sampling strategies are examined using Monte Carlo simulation coupled with application of this estimator. The simulation is based on a large set of total phosphorus data from the Potomac River. To assure that the simulated records have realistic properties, the data are modeled in a multiplicative fashion incorporating flow, hysteresis, seasonal, and noise components.

NTIS No: PB87-198974/HDM
Title: Transport of Acidic Matter in Maryland: May-December 1984; Final rept.
Performing Organization: Martin Marietta Environmental Systems, Columbia, MD.
Report No: PPRP/AD-87-4
Sponsoring Organization: Maryland Power Plant Research Program, Annapolis. Notes: Portions of this document are not fully legible.; Sponsored by Maryland Power Plant Research Program, Annapolis.
Date: 3 Mar 87 Pages: 296p NTIS Price Code: PC A13/MF A01
Language: English

Abstract: An analysis of air mass trajectories associated with precipitation events was conducted using the Heffter transport model and precipitation event data from May-December 1984 at two collection sites in Maryland's coastal plain. Heffter trajectories were computed for events in which most or all chemical analyses were performed and in which information on event start and stop times was available. [PA]

III A. Water-General

1972062

Application of trajectory decomposition method of the water quality control problem.

Systems analysis and simulation 1988, II (Berlin, 1988)
Berezinski, Miroslaw
Petryczek, Grazyna
1988,
Akademie-Verlag, Berlin,; 69--74,,
Series: Math. Res., 47,
Language: English
Document Type: Proceedings Paper
Subfile: CMP (Current Mathematical Publications) AMS
Type of Abstract: Review pending
[MAT]

02683322

Title: BEHAVIOR AND DESIGN OF VERTICAL MOISTURE BARRIERS.

Author: Picornell, M.; Lytton, R. L.
Corporate Source: Univ of Texas at El Paso, El Paso, TX, USA Source: Transportation Research Record n 1137 1987 p 71-81 Publication Year: 1987
Language: English
Document Type: JA; (Journal Article)
Treatment: A; (Applications)

Abstract: Seasonal wetting and drying affect pavements on expansive soils with two main damage types: roughness development and longitudinal cracking. The purpose of the moisture barrier is to isolate the subsoil from these climatic changes. The predominate type of damage and the function of the barrier are dominant type of damage and the function of the barrier are found to depend on the initial moisture conditions of the subsoil. For desiccated soils, the barrier must prevent the infiltration of rainfall into the shrinkage cracks to stop the development of roughness. For wet soils, the barrier must prevent excessive drying under the edge of the pavement. The barrier depth is chosen base on the maximum crack depth and the shrinkage of the pavement edge that would occur under the most severe drought intensity expected during the lifetime of the pavement. The drought intensity is chosen based on a statistical analysis of meteorological data for the site. (Edited author abstract). 30 Refs. [COM]

NTIS No: PB88-161773/HDM

Title: Biotic and Abiotic Degradation Rates of Methyl Parathion in Freshwater and Estuarine Water and Sediment Samples; Journal article

Performing Organization: Gulf Coast Research Lab., Ocean Springs, MS.
Report No: EPA/600/J-87/192
Sponsoring Organization: Air Force Engineering and Services Center, Tyndall AFB, FL. Directorate of Environmental Planning.; Environmental Research Lab., Gulf Breeze, FL.
Notes: Pub. in Chemosphere, v16 n7 p1509-1520 1987.; Prepared in cooperation with Air Force Engineering and Services Center, Tyndall AFB, FL. Directorate of Environmental Planning. Sponsored by Environmental Research Lab., Gulf Breeze, FL.
Date: c1987 Pages: 14p NTIS Price Code: PC A03/MF A01
Language: English

Abstract: Statistical analysis of degradation rates of methyl parathion samples from two Gulf Coast estuaries over a three-year period indicated that biodegradation occurred in the presence of sediment but was insignificant in water. Sediment rates always showed the same relative five-fold difference at a primary site within each estuarine area. Samples from 11 ancillary sites indicated biodegradation rates in sediments can be subdivided into two groupings which were independent of seasonal differences (excluding temperature). Spatial variations in rates, therefore, may be of minor environmental significance for the chemical in estuarine areas. [NT]

NTIS No: PB88-210422/HDM

Title: Chlorinated Paraffins: A Report on the Findings from Two Field Studies, Sugar Creek, Ohio, Tinkers Creek, Ohio. Volume 1. Technical Report; Final rept. 1986-87

Performing Organization: Midwest Research Inst., Kansas City, MO.
Report No: EPA/560/5-87/012
Sponsoring Organization: Battelle Columbus Labs., Washington, DC.; Environmental Protection Agency, Washington, DC. Office of Toxic Substances. Notes: See also Volume 2, PB88-210430.; Prepared in cooperation with Battelle Columbus Labs., Washington, DC. Sponsored by Environmental Protection Agency, Washington, DC. Office of Toxic Substances.
Date: Feb 88 Pages: 150p NTIS Price Code: PC A07/MF A01
Language: English

Abstract: The report presents the results of two field studies conducted in 1986 by the Environmental Protection Agency's Office of Toxic Substances (EPA/OTS) under the existing chemicals program to screen selected waterbodies for the presence of chlorinated paraffins. Chlorinated paraffins are saturated straight-chain hydrocarbons ranging from 10 to 30 carbons in length and contining 20 to 70 percent chlorine by weight. The information gained from these field studies will be coupled with that from other environmental hazard and environmental exposure studies and collectively contribute to an EPA risk assessment for this chemical. The report also develops an analytical method for chlorinated paraffins in different environmental matrices and includes a rigorous statistical analysis of the data used to validate the method. [NT]

NTIS No: PB88-210430/HDM

Title: Chlorinated Paraffins: A Report on the Findings from Two Field Studies, Sugar Creek, Ohio, Tinkers Creek, Ohio. Volume 2. Appendix D, The Quality Assurance Project Plan; Final rept. 1986-87

Performing Organization: Midwest Research Inst., Kansas City, MO.
Report No: EPA/560/5-87/012
Sponsoring Organization: Battelle Columbus Labs., Washington, DC.; Environmental Protection Agency, Washington, DC. Office of Toxic Substances. Notes: See also Volume 1, PB88-210422.; Prepared in cooperation with Battelle Columbus Labs., Washington, DC. Sponsored by Environmental Protection Agency, Washington, DC. Office of Toxic Substances.
Date: Feb 88 Pages: 130p NTIS Price Code: PC A07/MF A01
Language: English

Abstract: The report presents the results of two field studies conducted in 1986 by the Environmental Protection Agency's Office of Toxic Substances (EPA/OTS) under the existing chemicals program to screen selected waterbodies for the presence of chlorinated paraffins. Chlorinated paraffins are saturated straight-chain hydrocarbons ranging from 10 to 30 carbons in length and containing 20 to 70 percent chlorine by weight. The information gained from these field studies will be coupled with that from other environmental hazard and environmental exposure studies and collectively contribute to an EPA risk assessment for this chemical. The report also develops an analytical method for chlorinated paraffins in different environmental matrices and includes a rigorous statistical analysis of the data used to validate the method. [NT]

NTIS No: PB88-220504/HDM

Title: CORMIX1: An Expert System for Mixing Zone Analysis of Toxic and Conventional, Single Port Aquatic Discharges

Performing Organization: Cornell Univ., Ithaca, NY. Dept. of Environmental Engineering.
Report No: EPA/600/3-88/013
Sponsoring Organization: Environmental Research Lab., Athens, GA.
Notes: Sponsored by Environmental Research Lab., Athens, GA.
Date: Jun 88 Pages: 367p NTIS Price Code: PC A16/MF A01
Language: English

Abstract: An expert system, CORMIX1, was developed to predict the dilution and trajectory of a single buoyant discharge into an unstratified aquatic environment with and without crossflow. The system uses knowledge and inference rules obtained from hydrodynamic experts to classify and predict buoyant jet mixing. CORMIX1 gathers the necessary data, checks for data consistency, assembles and executes the appropriate hydrodynamic simulation models, interprets the results of the simulation in terms of the legal requirements including toxic discharge criteria, and suggests design alternatives to improve dilution characteristics. The results of the hydrodynamic simulation are in good to excellent agreement with field and laboratory data. In particular, CORMIX1 correctly predicts highly complex discharge situations involving boundary interactions and buoyant intrusions, a result not predicted by other currently available initial mixing models. [NT]

02671160

Title: DETECTION LIMIT.

Author: Porter, P. Steven; Ward, Robert C.; Bell, Harry R. Corporate Source: Everglades Research & Education Cent, Belle Glade, FL, USA
Source: Environmental Science and Technology v 22 n 8 Aug 1988 p 856-861 Publication Year: 1988
Language: English
Document Type: JA; (Journal Article)
Treatment: G; (General Review); T; (Theoretical); X; (Experimental)

Abstract: Water quality monitoring data are plagued with levels of chemicals that are too low to be measured precisely. This article focuses on the information needs of water quality management and how these needs are best met for monitoring systems that require many trace-level measurements. It proposes that the limit of detection (LOD) or the limit of quantitation (LOQ) not be used to censor data. Although LOD and LOQ aid in the interpretation of individual measurements, they hinder statistical analysis of water quality data. More information is gained when a numerical result and an estimate of measurement precision are reported for every measurement, as opposed to reporting 'not detected' or 'less than'. Subjects covered include statistical analyses, monitoring information, and system error. 42 Refs. [COM]

NTIS No: PB88-224969/HDM

Title: Development of an Environmental Data Base for Rivers, Lakes, and Reservoirs; Journal article

Performing Organization: Environmental Monitoring Systems Lab., Las Vegas, NV.
Report No: EPA/600/J-88/024
Sponsoring Organization: Battelle Pacific Northwest Labs., Richland, WA. Notes: Pub. in Jnl. of Environmental Science and Health, vA23 n2 p103-126 1988.; Prepared in cooperation with Battelle Pacific Northwest Labs., Richland, WA.
Date: c1988 Pages: 26p NTIS Price Code: PC A03/MF A01
Language: English
Document Type: Journal article

Abstract: One method for performing exposure assessments is to use mathematical models that predict the transport and transformations of toxic substances in the environment. To run these models, a variety of input data on receiving water-body properties and water-quality parameters that define a range of environments and influence the chemical-specific rate coefficients must be developed. A data base that contains selected hydrologic and water quality parameters has been developed by EPA for 15 major U.S. river basins. Called the Canonical Environments Data Base, the file brings together information developed by public and private organizations on each reach of the rivers as well as individual lakes and reservoirs in the basins. Coupling raw data with a data base management system in the environmental file will facilitate entry into and deletions from the data base and development of data input to the Exposure Analysis Modeling System (EXAMS) and other similar exposure assessment mathematical models. (Copyright (c) 1988 by Marcel Dekker, Inc.) [NT]

NTIS No: PB89-119580/HDM

Title: EPA (Environmental Protection Agency) Method Study 39, Method 504, 1,2-Dibromoethane (EDB) and 1,2-Dibromo-3-Chloropropane (DBCP) in Water by Microextraction and Gas Chromatography; Final rept. Jun-Dec 87

Performing Organization: Bionetics Corp., Cincinnati, OH. Report No: EPA/600/4-88/034

Sponsoring Organization: Environmental Monitoring Systems Lab., Columbus, OH.

Notes: Sponsored by Environmental Monitoring Systems Lab., Columbus, OH. Date: Oct 88 Pages: 61p NTIS Price Code: PC A04/MF A01

Language: English

Abstract: An interlaboratory collaborative study assessed the precision and bias (recovery) of Method 504 for the analysis of two semi-volatile organic compounds in groundwater: 1,2-dibromoethane and 1,2-dibromo-3-chloropropane in water. The study design was based upon Youden's non-replicate plan for collaborative tests of analytical methods. The data analyses produced measures of precision and recovery for each compound in each water type and compared the performance of the method between water types. [NT]

NTIS No: PB88-133624/HDM

Title: Expert Advisor for the QUAL2E Water Quality Model

Performing Organization: Environmental Research Lab., Athens, GA. Report No: EPA/600/D-87/352

Sponsoring Organization: Tufts Univ., Medford, MA. Dept. of Civil Engineering.; Kentucky Univ., Lexington.

Notes: Prepared in cooperation with Tufts Univ., Medford, MA. Dept. of Civil Engineering, and Kentucky Univ., Lexington.

Date: Dec 87 Pages: 14p NTIS Price Code: PC A03/MF A01

Language: English

Abstract: Computer modeling is becoming an integral part of decision making in water pollution control. Problems increasingly involve complex interactions among elements of the environment and large, multi-media modeling systems must be built to understand these interactions. Expert systems is an innovative methodology that can assist in building, using, and interpreting the output of these models. The paper reviews the use and evaluates the potential of expert systems technology in environmental modeling and describes elements of an expert advisor for the stream water quality model QUAL2E. QUAL2E has a long history of use both in the United States and worldwide and is a proven, effective

modeling tool for analyzing the dissolved oxygen balance in a stream or river. Because of the widespread usage, a body of experience and empirical knowledge about the computer program has been gained that is ideal for codification in an expert system. [NT]

0194166
FACTORS AFFECTING THE MEASUREMENT OF TRACE METALS IN MARINE BIOLOGICAL TISSUE,
UTHE J. F. ; CHOU C. L.
DEPT OF FISHERIES AND OCEANS, CANADA,
SCIENCE OF THE TOTAL ENV, APR 88, V71, N1, P67(18)

RESEARCH ARTICLE STUDIES OF TRACE METALS IN MARINE BIOTA COMPRISE A NUMBER OF LOGICAL STEPS FROM SAMPLING THROUGH CHEMICAL AND STATISTICAL ANALYSIS TO THE MOST ACCURATE ANSWER TO THE QUESTION ORIGINALLY POSED. ERRORS OR USE OF INAPPROPRIATE METHODS AT ANY STEP OF THE OVERALL PROCEDURE CAN SEVERELY COMPROMISE THE RESULTS. THIS PAPER IDENTIFIES A NUMBER OF SUCH ERRORS AND PROBLEMS AND DESCRIBES WAYS OF AVOIDING THEM. THE IMPORTANCE OF PROPER STATISTICAL MODELING AND ANALYSIS IN ADDRESSING MARINE CONTAMINATION PROBLEMS IS EMPHASIZED BY REFERENCE TO A NUMBER OF EXAMPLES FROM INVESTIGATIONS IN THE COASTAL MARINE AREA OF EASTERN CANADA. (1 DIAGRAM, 3 GRAPHS, 22 REFERENCES, 8 TABLES) [ENV]

NTIS No: PB89-143507/HDM
Title: Geostatistical Interpolation of Hydrostratigraphy at Groundwater Contamination Sites; Technical rept. (Final)
Performing Organization: California Univ., Santa Cruz.
Sponsoring Organization: Geological Survey, Reston, VA. Water Resources Div.
Notes: Sponsored by Geological Survey, Reston, VA. Water Resources Div.
Date: Dec 88 Pages: 36p NTIS Price Code: PC A03/MF A01
Language: English

Abstract: The study illustrates the use of indicator geostatistics for interpreting complex alluvial stratigraphy from qualitative borehole logs. Locations of relatively high and low permeability regions are described by inferring relative permeability from borehole descriptions and assigning binary indicator values of either 1 or 0 to intervals in the borehole logs. The resulting indicator data can then be used to compute experimental variograms and construct three-dimensional variogram models. The approach is applied to a groundwater contamination site in Santa Clara Valley, CA. Computed indicator variograms are consistent with known stratigraphic features. They describe details in the spatial structure of the deposits that reflect differing depositional environments. Indicator kriging consistently weights all the available data on the basis of a three-dimensional, anisotropic variogram model and provides an estimate of uncertainty in the hydrostratigraphic correlation. [NT]

NTIS No: PB88-144167/HDM

Title: MINTEQA1, an Equilibrium Metal Speciation Model: User's Manual

Performing Organization: Environmental Research Lab., Athens, GA.
Report No: EPA/600/3-87/012
Sponsoring Organization: Computer Sciences Corp., Athens, GA. Notes: Prepared in cooperation with Computer Sciences Corp., Athens, GA.
Date: Oct 87 Pages: 103p NTIS Price Code: PC A06/MF A01
Language: English

Abstract: Recent advances in technical understanding of the processes controlling the behavior of pollutants in the environment have led to the development of many predictive models. MINTEQA1 is a versatile, quantitative geochemical model for predicting the equilibrium behavior of metals in a variety of chemical environments. The complex series of reactions among solution species, gases, solids, and sorbed phases can be modeled relatively easily using MINTEQA1. The MINTEQA1 manual is designed to acquaint new users with the geochemical principles and mathematical formalisms involved in using the program. A major goal is to minimize the effort unfamiliar users must expend in acquiring an operational knowledge of the valuable environmental modeling tool and thus promote its use in a variety of environmental risk assessment and hazard evaluation scenarios. [NT]

NTIS No: PB88-245923/HDM
Title: National Stream Survey: Phase 1 Field Operations Report
Performing Organization: Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV.
Report No: EPA/600/4-88/023
Sponsoring Organization: Environmental Monitoring Systems Lab., Las Vegas, NV.
Notes: See also PB88-170840.; Sponsored by Environmental Monitoring Systems Lab., Las Vegas, NV.
Date: 1988 Pages: 48p NTIS Price Code: PC A03/MF A01
Language: English

Abstract: The National Stream Survey was conducted during the spring of 1986 as a synoptic chemical survey to characterize streams in the mid-Atlantic and southeastern regions of the United States which were thought to be potentially susceptible to acidic deposition. The survey included three distinct parts: a Phase I survey of streams in the mid-Atlantic region; a Screening survey designed to assess the need for future Phase I studies in the United States; and an Episodes Pilot survey designed to provide a preliminary assessment of the frequency, duration, and characteristics of storm episodes in the mid-Atlantic states. The report describes the survey planning, protocol development, personnel requirements, field operations, and logistical aspects of all three components of the National Stream Survey. Because of the large scope and geographical area covered by the survey, sampling regions were subdivided into four areas, each containing approximately the same number of streams. Samples were collected, shipped at 4 degrees C, and received within 24 hours by a central processing laboratory. Sampling was completed on schedule, and 447 out of a total of 470 streams were sampled. A detailed evaluation of episodes sampling is provided with recommendations for future consideration. [NT]

NTIS No: PB88-140298/HDM

Title: National Surface Water Survey, National Stream Survey. Phase 1. Pilot Survey, Summary of Quality Assurance Data Results

Performing Organization: Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV.

Report No: EPA/600/8-87/057

Sponsoring Organization: Environmental Monitoring Systems Lab., Las Vegas, NV.

Notes: See also PB87-188702.; Sponsored by Environmental Monitoring Systems Lab., Las Vegas, NV.

Date: Dec 87 Pages: 54p NTIS Price Code: PC A04/MF A01

Language: English

Abstract: A primary objective of the National Surface Water Survey and, thus, of the National Stream Survey is to ensure that the data collected are scientifically sound and of known quality. An extensive quality assurance program has been established in support of the objective. To evaluate the effectiveness of the quality assurance program, several types of quality assurance and quality control samples were collected and analyzed during a pilot survey that was conducted prior to the initiation of National Stream Survey Phase I field activities. The report presents a statistical analysis of results obtained for field duplicate samples, blank samples, and audit samples used in the pilot survey. The results show that even overall estimated within-batch precision was adequate to meet the analytical data quality objectives established for the National Stream Survey and that detection limit goals were achieved at the contract analytical laboratories. The observed system decision limits and system detection limits, however, must be considered in interpreting the pilot study data and data from future surveys that employ similar sampling, processing, and analytical methods. [NT]

NTIS No: PB88-126438/HDM

Title: Numerical Model for Three-Dimensional, Variable-Density Hydrodynamic Flows: Documentation of the Computer Program

Performing Organization: Environmental Research Lab.-Duluth, MN.
Report No: EPA/600/3-87/042
Sponsoring Organization: Science Applications International Corp., Narragansett, RI.
Notes: Sponsored by Science Applications International Corp., Narragansett, RI.
Date: Nov 87 Pages: 241p NTIS Price Code: PC A11/MF A01
Language: English

Abstract: As part of a research effort by the U.S. Environmental Protection Agency to study the dispersion of pollutants in aquatic systems, a numerical model has been developed that is capable of realistically describing the hydrodynamics in lakes, embayments, nearshore marine coastal areas, and riverine and thermal outfall plumes. The model is time-dependent, three-dimensional, and variable density. Both rigid-lid and free-surface flows can be determined. The main assumptions used in the development of the model include hydrostatic pressure variation, Boussinesq approximation, and eddy coefficients to account for turbulence. A new solution procedure, which is a modification of the simplified marker and cell method, is used. The procedure permits selected terms in the equations to be treated implicitly in time. The report provides the documentation for the computer program for the numerical model. [NT]

NTIS No: PB89-138747/HDM

Title: SLAPMAN Model for Groundwater Pathway (for Microcomputer); Model-Simulation

Performing Organization: Environmental Protection Agency, Washington, DC. Office of Water Regulations and Standards.
Report No: EPA/SW/DK-89/017
Notes: The software is contained on 5 1/4-inch diskettes, double density, compatible with the IBM PC microcomputer. The diskettes are in the ASCII format. Price includes documentation, PB89-149298.
Date: 1989 Pages: 2 diskettes NTIS Price Code: CP D99
Language: English

Abstract: SLAPMAN is a set of computer programs designed to estimate concentrations for 19 chemicals migrating from an application area. The chemicals are: arsenic, cadmium, chromium, copper, lead, mercury, nickel, TKN, zinc, benzene, benzo(a)pyrene, bis(2-ethylhexyl)phthalate chlordane, DDT/DDE/DDD, dimethylnitrosamine, lindane, PCBs, trichloroethylene, toxaphene. SLAPMAN calculates a 'reasonable worst case' level of human exposure to chemicals leaching from an application area and being carried downwind by the atmosphere. Exposure levels can then be compared to health criteria to determine if they are likely to cause unacceptable impacts. SLAPMAN can also be used to calculate acceptable input concentrations given limiting concentrations at the aquifer. Software Description: The software is written in the Fortran programming language for implementation on IBM-PC or compatible machines using DOS 3.0 or higher operating systems. Minimum memory is 512K. Special features/requirements: Single floppy disk drive and a hard disk. [NT]

02622061

Title: STATISTICAL ANALYSIS OF RARE EVENTS IN GROUNDWATER.

Author: Silver, Carl A.; Dunn, Dennis
Corporate Source: Drexel Univ, Philadelphia, PA, USA
Source: Journal of Hazardous Materials v 18 n 1 Apr 1988 p 17-24
Publication Year: 1988
Language: English
Document Type: JA; (Journal Article)
Treatment: X; (Experimental)

Abstract: Statistical analysis of trace organics and other pollutants that occur rarely in 'clean' groundwater poses difficult problems for conventional parametric statistical tests. The frequent occurrence of 'less than' values, values above the detection limit but below the quantification limit, many zeros, and unidentified pollutants make the use of statistics that require normal distribution or equal variances impractical. A method based upon the Poisson distribution that results in exact binomial probabilities for hypothesis testing is proposed. This method allows comparison of up-gradient wells with down gradient wells or preoperational data with operational data for monitoring the performance of hazardous waste disposal sites. A numerical example, operating characteristic curves, and calculating algorithms are provided. (Author abstract) 5 refs. [COM]

02205057

Title: STATISTICAL CHARACTERISTICS OF GROUND-WATER QUALITY VARIABLES.

Author: Montgomery, Robert H.; Loftis, Jim C.; Harris, Jane
Corporate Source: Woodward-Cylde Consultants, Denver, CO, USA
Source: Ground Water v 25 n 2 Mar-Apr 1987 p 176-184
Publication Year: 1987
Language: ENGLISH
Document Type: JA; (Journal Article)   Treatment: G; (General Review)

Abstract: A synthesis of current literature and a statistical analysis of existing ground-water quality data were conducted. Specifically, the purpose of the study was to determine whether ground-water quality variables: (1) are normally distributed, (2) exhibit seasonal patterns, and (3) are correlated in time. The results of the investigation suggest that many ground-water quality variables: are not normally distributed, but have skewed right distributions; can exhibit seasonal fluctuations of various shapes and magnitudes, especially in shallow or highly permeable aquifers; and can exhibit significant serial correlation when samples are collected quarterly. (Edited author abstract) 17 refs. [COM]

NTIS No: PB88-235130/HDM

Title: Statistical Model of Environmental Contaminants Using Variance Spectrum Analysis; Final rept.

Performing Organization: Manhattan Coll., Bronx, NY. Dept. of Environmental Engineering and Science.
Report No: NSF/ENG-87053
Sponsoring Organization: National Science Foundation, Washington, DC. Directorate for Engineering.
Notes: Sponsored by National Science Foundation, Washington, DC. Directorate for Engineering.
Date: Aug 87 Pages: 195p NTIS Price Code: PC A09/MF A01
Language: English

Abstract: The purpose of the project is to develop techniques for predicting statistical properties of the concentrations of potentially toxic chemicals in aquatic organisms, such as fish. The statistical properties include mean, variance, coefficient of variation, autocorrelation and variance spectrum functions. The research direction is prompted by the need to relate the variability of the effluent concentration of chemicals to the variability in the water column and then, in turn, to the variability in a target aquatic organism. [NT]

1911809

Strategies for large-scale, distributed hydrologic simulation.

Band, Lawrence E. (Department of Mathematics, Hunter College, CUNY, New York, 10021, New York)

Wood, Eric F. (Department of Civil Engineering, Princeton University, Princeton, 08540, New Jersey)

Corporate Source Codes: 1-CUNYH; 1-PRIN-C

Applied Mathematics and Computation, 1988, 27, no. 1, 23--37.

Language: English

Document Type: Journal

Subfile: CMP (Current Mathematical Publications) AMS

Type of Abstract: No review planned

[MAT]

89-00475

A tau-like test for trend in the presence of multiple censoring points

Hughes, J.P.; Millard, S.P.

Dep. Biostat., Univ. Washington GG-19, Seattle, WA 98195, USA WATER RESOUR. BULL VOL. 24, NO. 3, pp. 521-531, Publ.Yr: 1988 SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

A common problem arises in testing for trends in water quality when observations are reported as "less than detection limit." If a single detection limit is used for the entire study, existing nonparametric statistical methods, modified for ties, are applicable. If, however, the detection limit varies during the course of the study, resulting in multiple detection limits, then the commonly used trend detection methods are not appropriate. A statistic similar to Kendall's tau, but based on expected ranks, is proposed. Monte Carlo simulations show that the normal approximation to the distribution of this statistic is quite good, even for small samples and a large proportion of censored observations. [PA]

NTIS No: PB87-170825/HDM

Title: USEPA (U.S. Environmental Protection Agency) Method Study, Method 510.1: The Determination of the Maximum Total Trihalomethane Potential

Performing Organization: Environmental Monitoring and Support Lab.-Cincinnati, OH. Quality Assurance Branch.
Report No: EPA/600/4-86/040
Date: Mar 87 Pages: 56p NTIS Price Code: PC A04/MF A01
Language: English

Abstract: A method validation study of the Method, 510.1: 'The Determination of Maximum Total Trihalomethane Potential'. The MTP determination maximizes the formation of TTHM concentration could become under conditions favoring TTHM formation. It may be used by systems employing ground water sources to demonstrate the appropriateness of a reduced monitoring requirement. The method involves the reaction of 3,5-dihydroxybenzoic acid with a chlorine residual for a 7-day period. When a chlorine residual is maintained continually, the dihydroxy-benzoic acid is converted to chloroform. If other halogens present in the make-up water, other trihalomethanes are formed in the determination of trihalomethanes by either the purge and trap or liquid-liquid extraction procedure. The study design was based on Youden's non-replicate plan for collaborative testing by laboratories familiar with the method. [NT]

NTIS No: PB88-185095/HDM

Title: WASP4, A Hydrodynamic and Water Quality Model - Model Theory, User's Manual, and Programmer's Guide

Performing Organization: Environmental Research Lab., Athens, GA.
Report No: EPA/600/3-87/039
Sponsoring Organization: Computer Sciences Corp., Athens, GA.; Manhattan Coll., Bronx, NY.; Woodward-Clyde Consultants, Walnut Creek, CA. Notes: See also PB87-110995.; Prepared in cooperation with Computer Sciences Corp., Athens, GA., Manhattan Coll., Bronx, NY., and Woodward-Clyde Consultants, Walnut Creek, CA.
Date: Jan 88 Pages: 317p NTIS Price Code: PC A14/MF A01
Language: English

Abstract: The Water Quality Analysis Simulation Program Version 4 (WASP4) is a dynamic compartment modeling system that can be used to analyze a variety of water quality problems in a diverse set of water bodies. WASP4 simulates the transport and transformation of conventional and toxic pollutants in the water column and benthos of ponds, streams, lakes, reservoirs, rivers, estuaries, and coastal waters. The WASP4 modeling system covers four major subjects--hydrodynamics, conservative mass transport, eutrophication-dissolved oxygen kinetics, and toxic chemical-sediment dynamics. The WASP4 modeling system consists of two stand-alone computer programs, DYNHYD4 and WASP4, that can be run in conjunction or separately. The hydrodynamic program, DYNHYD4, simulates the movement of water and the water quality program, WASP4, simulates the movement and interaction of pollutants within the water. The latter program is supplied with two kinetic sub-models to simulate two of the major classes of water quality problems--conventional pollution (dissolved oxygen, biochemical oxygen demand, nutrients, and eutrophication) and toxic pollution (organic chemicals, heavy metals, and sediment). The substitution of either sub-model constitutes the models EUTRO4 and TOXI4, respectively. [NT]

III B. Water Sources/Abatement

WATER B 1 -Industrial Pollution

86-05352

Decomposition of potato processing wastes in soil

Smith, J.H.
Snake River Conserv. Res. Cent., USDA, Agric. Res. Serv., Kimberly, ID 83341, USA
J. ENVIRON. QUAL VOL. 15, NO. 1, pp. 13-16, Publ.Yr: 1986
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Solid filtered or centrifuged potato processing wastes were obtained from three potato processors in Idaho. The waste samples were dried and ground to pass a 2-mm sieve and added to soils at rates of 0, 2.5, 10, and 25 g/kg. The 100-g samples of Portneuf silt loam soil containing the waste material was incubated at 26 degree C and decomposition of the added wastes was determined by measuring CO sub(2) evolution in a flowing air stream passing over the soil in the incubation flask. Each increment of added organic waste material increased the amount of carbon evolved during the 12-week incubation. The waste materials contained 6.8, 20.4, or 65.5 g N/kg waste. However, these differences in N did not change the amount of CO sub(2) evolved at the 12-week incubation, although the evolution curves were shaped somewhat differently during the 12 weeks. Regression analyses of the cumulative carbon resulted in highly significant R super(2) values being obtained for each potato processing waste material. Decomposition of the solid waste materials ranged from 24 to 92% depending upon the source and application rate. The rapid decomposition of the solid wastes verified field research indicating that potato wastes have not more than 1 yr residual fertilizer value. The organic waste is not likely to accumulate in the field. [PA]

89-05937

Estimating the impacts of LPG spills during transportation accidents

Van Aerde, M.; Stewart, A.; Saccomanno, F.; Venart, J.E.S. (ed.) Dep. Civ. Eng., Queen's Univ., Kingston, Ont. K7L-3N6, Canada

International Conference of Major Hazards in the Transport and Storage of Pressure Liquified Gases Fredericton (Canada) 10-13 Aug 1987

J. HAZARDOUS MATER VOL. 20, NO. 1-3, pp. 375-392, Publ.Yr: 1988

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Transportation accidents involving releases of liquefied petroleum gases can cause substantial damage to the population and property adjacent to an accident scene. While some researchers have analyzed specific aspects of L.P.G. release in detail, to date no single self-contained model could estimate all significant impacts of transporation-related releases at once. In response to this need, this paper describes a model which was designed to perform such an assessment. Both interactive and batch versions of the LPG-1 model have been implemented, which can be applied either in isolation or as modules within a larger risk assessment model. [PA]

02295398

Title: Factors Influencing Residual Cadmium Concentration in Wastewater.

Title: FAKTORY OVPLYVNUJUCE ZBYTKOVU KONCENTRACIU KADMIA V ODPADOVYCH VODACH.

Author: Vojtas, Bohumil; Sramko, Tibor

Corporate Source: SEZ Kp, Czech

Source: Chemicky Prumysl v 37 n 2 Feb 1987 p 98-101

Publication Year: 1987

CODEN: CHPUA4 ISSN: 0009-2789

Language: SLOVAK

Document Type: JA; (Journal Article)

Treatment: X; (Experimental)

Abstract: The most important factors that influence concentration of cadmium in wastewater from surface treatment of metals have been studied. The dependence of cadmium concentration on the initial concentration of iron and alkaline metals was proved by a statistical analysis of experimental data. On the other hand, the initial cadmium concentration as well as the pH proved to be statistically insignificant. (Edited author abstract) 21 refs. In Slovak. [COM]

89-04465

Performance of oil industry cross-country pipelines in western Europe: Statistical summary of reported spillages - 1987

Rudolph, E.K.; Bianchini, M.; Gilla, G.; Beuillard, C.; Lyons, D. CONCAWE, Oil Pipelines Manage. Group, The Hague, Netherlands Publ.Yr: 1988
CONCAWE, THE HAGUE (NETHERLANDS)
SUMMARY LANGUAGE - ENGLISH; Rep. No. 8/88.
Languages: ENGLISH

This report is the latest in a series of annual reports issued by CONCAWE reviewing the performance of oil industry cross-country pipelines in Western Europe. It includes details of the pipeline network to which it refers, and analyses reported spillage incidents by cause and effectiveness of clean-up. Causes are categorized as: mechanical failure, operational error, corrosion, natural hazard and third party activity. The report concludes with a five-year comparison and trend analysis of reported spillages. It contains an overall map of the Western European oil industry cross-country pipeline system and more detailed maps of the pipeline-networks of the Le Havre-Paris, Golfe de Fos, Rotterdam-Europoort and Northern Italy areas. [PA]

0192927

STATISTICAL ANALYSIS OF INDUSTRIAL WASTEWATER MONITORING DATA,

LOFTIS J. C. ; PORTER P. S. ; SETTEMBRE G.
COLORADO STATE UNIV,
WPCF J, MAR 87, V59, N3, P145(7)

JOURNAL ARTICLE SUPERVISORY CONTROL OF INDUSTRIAL WASTEWATER TREATMENT IS FREQUENTLY SUPPORTED BY PERIODIC COLLECTION AND ANALYSIS OF GRAB AND COMPOSITE SAMPLES TAKEN FROM SEVERAL POINTS IN THE TREATMENT PROCESS. BY VIEWING THE MONITORING PROGRAM AS A TOTAL SYSTEM, INCLUDING DATA COLLECTION, DATABASE MANAGEMENT, AND STATISTICAL ANALYSIS, A SMOOTH FLOW OF INFORMATION TO USERS CAN BE EFFECTED. THE SURFACE WATER MONITORING PROGRAM AT THE EAST FISHKILL, NY, FACILITY OF IBM CORP. WAS REDESIGNED USING THE TOTAL SYSTEM CONCEPT. HISTORICAL DATA WERE ANALYZED TO ASSESS NORMALITY AND PREDICTABLE CYCLES. STATISTICAL PROCEDURES FOR ROUTINE DATA ANALYSIS WERE THEN SPECIFIED BASED ON CHARACTERISTICS OF THE VARIABLES MONITORED AND ON INFORMATION NEEDS OF MANAGERS. A COMPUTERIZED DATA MANAGEMENT SYSTEM WAS IMPLEMENTED FOR DATA STORAGE AND

RETRIEVAL, STATISTICAL AND GRAPHIC ANALYSIS, AND REPORT GENERATION. (1 DIAGRAM, 6 GRAPHS, 19 REFERENCES, 1 TABLE) [ENV]

89-05960

Thermodynamic and calculations with special reference to the aqueous aluminum system

Oehman, L.-O.; Sjoeberg, S.; Kramer, J.R.; Allen, H.E. (eds.) Dep. Inorg. Chem., Univ. Umea, S-901 87 Umea, Sweden
Metal Speciation: Theory, Analysis and Application Jekyll Island, GA (USA) 20-22 May 1987
CONFERENCE ON METAL SPECIATION: THEORY, ANALYSIS AND APPLICATION pp. 1-40, Publ.Yr: 1988
LEWIS PUBLISHERS, INC., CHELSEA, MI (USA)
Languages: ENGLISH
Journal Announcement: V20N4
[PA]

NTIS No: PB89-134647/HDM

Title: Waste Allocation Simulation Models: A State-of-the-Art Review (Journal Version)

Performing Organization: Environmental Research Lab., Athens, GA.
Report No: EPA/600/J-88/209
Sponsoring Organization: Manhattan Coll., Bronx, NY.; Iowa Univ., Iowa City.
Notes: Pub. in Jnl. Water Pollution Control Federation, v60 n9 p1646-1655 Sep 88.; Presented at the Annual Conference of the Water Pollution Control Federation (59th), Los Angeles, CA. Prepared in cooperation with Manhattan Coll., Bronx, NY., and Iowa Univ., Iowa City.
Date: c1988 Pages: 13p NTIS Price Code: PC A03/MF A01
Language: English

Abstract: The waste load allocation process for toxic chemicals requires a different approach than that used for conventional pollutants. Present waste load allocations for toxicants generally rely on simple dilution calculations for low stream flow conditions. The paper examines the new water quality criteria for toxicants and the modeling strategies used to implement the criteria. The new criteria specify an acute threshold concentration and a chronic-no-effect concentration for each toxicant as well as tolerable durations and frequencies of exposure at or above the two concentrations. Methods for using steady-state and dynamic models to derive waste load allocations based on the new criteria are reviewed. Physical, chemical, and biological processes affecting toxicants in the mixing zone and far-field regimes of streams are summarized. [NT]

WATER B 2 Sewer/Stormwater Overflow

02333767

Title: DESIGN OF STORMWATER DETENTION BASINS FOR MULTIPLE DESIGN FREQUENCIES.

Author: Ormsbee, Lindell E.; Delleur, J. W.; Houck, M. H. Corporate
Source: Univ of Kentucky, Lexington, KY, USA
Source: Journal of Hydraulic Engineering v 113 n 5 May 1987 p 601-614
Publication Year: 1987
Language: ENGLISH
Document Type: JA; (Journal Article)
Treatment: A; (Applications); N; (Numeric/Statistical)

Abstract: A general planning methodology has been developed for use in the planning of dual-purpose detention basins. The methodology employs continuous simulation, statistical analysis, and a general design heuristic to obtain an integrated system of detention basins. Both water quantity and water quality constraints may be considered. The methodology developed is used to examine two potential strategies for the design of stormwater management facilities for multiple design frequencies. These two strategies are applied to a synthetic watershed constructed from average geomorphic parameters for the state of Indiana. (Author abstract) 14 refs. [COM]

0199556

SIMULATION OF THE EFFECTS OF URBANIZATION ON BASIN STREAMFLOW,

NG H. Y. AND ; MARSALEK J. NATL WATER RESEARCH INST, ONTARIO,
WATER RESOURCES B, FEB 89, V25, N1, P117(8)

RESEARCH ARTICLE STREAMFLOW IN NEWFOUNDLAND'S WATERFORD RIVER BASIN WAS MODELED AS PART OF A STUDY OF THE EFFECTS OF URBANIZATION ON THE BASIN'S WATER RESOURCES. USING THE HSPF MODEL AND A DETAILED DATABASE, A CONTINUOUS SIMULATION MODEL WAS CALIBRATED FOR EXISTING CONDITIONS AND APPLIED TO FUTURE SCENARIOS. BECAUSE OF CLIMATE AND GEOLOGY, A RELATIVELY HIGH PROPORTION OF PRECIPITATION IS NOW CONVERTED TO STREAMFLOW. ALTHOUGH FUTURE URBAN DEVELOPMENT WOULD NOT RESULT IN INCREASED ANNUAL STREAMFLOW, IT WOULD CONTRIBUTE TO INCREASES IN PEAK FLOWS AND FLOODING BECAUSE OF MORE RAPID RUNOFF. A DOUBLING OF THE SIZE OF THE IMPERVIOUS AREA WOULD INCREASE PEAK FLOWS BY ABOUT 20%. (2 GRAPHS, 1 MAP, 11 REFERENCES, 4 TABLES) [ENV]

WATER B 3 SEWAGE/WASTE

89-02036

A new measure of interdependence among several pollutants

Schaeffer, D.J.
J. WATER POLLUT. CONTROL FED VOL. 60, NO. 7, pp. 1271-1274,
Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

A correlation measure tests interdependence among more than two features for observations expressible as binary (0 or 1) values. This measure is illustrated using data from a domestic sewage treatment plant. Pairwise correlations were determined for violations of influent biochemical oxygen demand (BOD), suspended solids (SS), and average flow design limits. BOD and SS violations were positively correlated with each other and negatively correlated with flow violations. Similar results were obtained for effluent violations. Three-way correlations for both influent and effluent were significant and negative, suggesting that flow was a common causative factor for the noncompliance events in this plant. [PA]

02715278

Title: Septic system maintenance management.

Author: Noss, Richard R.; Billa, Michael
Corporate Source: Bennett & Williams Ltd, Columbus, OH, USA Source:
Journal of Urban Planning and Development v 114 n 2 Dec 1988 p 73-90
Publication Year: 1988
Language: English
Document Type: JA; (Journal Article)
Treatment: E; (Economic/Cost Data/Market Survey); G; (General Review); M; (Management Aspects)

Abstract: Traditionally, the maintenance of on-lot wastewater disposal systems has been the responsibility of the homeowner. This paper examines the potential for management of on-lot systems by a municipal or regional management agency. Such management, because more frequent inspection and pumping of on-lot systems would occur, promises reduced ground and surface water pollution and reduced potential for public health hazard. It can reduce the costs of inspections and pumping on a per system basis due to possible economics of scale and management efficiencies. This paper also estimates the annual fee required to support municipal septic management, with and without the assumption by the municipal agency of all repair, replacement, and rehabilitation costs for the systems under its management. These latter costs are estimated by combining a statistical analysis of failures and repairs over the past 36 years in Amherst, Massachusetts, and the reported costs for typical repair and replacement actions. (Edited author abstract) 27 Refs. [COM]

WATER B 4 Sludge

87-00623

Utilization of hot iron desulfurization slag for wastewater treatment

Ganczarczyk, J.J.
Dep. Civ. Eng., Univ. Toronto, Toronto, Ont. M5S 1A4, Canada

Eastern Region Conference of the Canadian Association on Water Pollution Research and Control Montreal (Canada) 21 Nov 1985
EASTERN REGION CONFERENCE OF THE CANADIAN ASSOCIATION ON WATER POLLUTION RESEARCH AND CONTROL p. 8a, Publ.Yr: 1986
CANADIAN ASSOCIATION ON WATER POLLUTION RESEARCH AND CONTROL, MONTREAL (CANADA)
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Integrated steel mills generate a solid waste product, hot iron desulfurization slag, called also dekish station slag, which can be used for treatment of wastewater. Desulfurization slag is formed by application of calcium carbide to hot metal for the purpose of sulfur removal from original concentrations in the range of 0.04% to acceptable concentration of 0.01%. The resulting slag contains excess of calcium carbide, some calcium oxide and sulfide, and iron oxides. The elemental composition of desulfurization slag is distinctly different from other metallurgical slags. Typically it contains 45-48% of iron, 10-15% of calcium and 1.5-1.6% of sulfur. The treatment effects of the desulfurization slag are based on a release of sulfide and hydroxide ions on its contact with water, and on sorption qualities of the iron oxide. A high concentration of iron in this slag indicates a possibility of its recycle to the blast furnace after sintering. Only a high sulfur contents in this material may affect adversely the attractiveness of the slag reuse. However, the same utilization of the slag may be considered also after its use for wastewater treatment. The wastewater treatment sludge can be dewatered, dried, sintered, and directed to the blast furnace. The recycled material will contain much less sulfur than the original slag. [PA]

WATER B 5 Nonpoint Sources

NTIS No: PB88-190640/HDM

Title: Assessment of the Role of Bottomland Hardwoods in Sediment and Erosion Control

Performing Organization: National Ecology Research Center, Fort Collins, Co.

Report No: NERC-88/11

Sponsoring Organization: Colorado State Univ., Fort Collins. Dept. of Civil Engineering.; Environmental Protection Agency, Atlanta, GA. Region IV. Notes: Prepared in cooperation with Colorado State Univ., Fort Collins. Dept. of Civil Engineering. Sponsored by Environmental Protection Agency, Atlanta, GA. Region IV.

Date: Feb 88 Pages: 126p NTIS Price Code: PC A07/MF A01

Language: English

Abstract: Drainage and clearing of bottomland hardwoods have long been recognized by the U.S. Environmental Protection Agency (EPA) and the U.S. Fish and Wildlife Service (Service) as important impacts of Federal water projects in the lower Mississippi River Valley. Three phases of the project were identified: (1) to collect existing literature and data; (2) to select, develop, and test the utility of methods to quantify the relationships between land use, cover types, soils, hydrology, and water quality (as represented by sediment); and (3) to apply selected methodologies to several sites within the Yazoo Basin of Mississippi. Methods developed focused on linking a simulation of water and sediment movement to a computerized geographic information system. The authors had several objectives for the resulting model. The authors desired that it should estimate the importance of bottomland hardwoods as a cover type that performs the functions of erosion and sediment control. [NT]

NTIS No: PB87-219283/HDM

Title: Blue Mesa Reservoir, Colorado: A Historical Review of It's Limnology, 1965-1985

Performing Organization: Bio-Environs, Gunnison, CO.
Report No: REC-ERC-87-3
Sponsoring Organization: Bureau of Reclamation, Denver, CO. Engineering and Research Center.
Notes: Sponsored by Bureau of Reclamation, Denver, CO. Engineering and Research Center.
Date: Jun 87 Pages: 67p NTIS Price Code: PC A04/MF A01
Language: English

Abstract: Twenty years of biological, chemical, and physical data from Blue Mesa Reservoir, Colorado, were analyzed to elucidate the process of impoundment maturation in Bureau of Reclamation reservoirs. Blue Mesa Reservoir was chosen for two reasons: (1) the impoundment is 20 years old, and should have attained trophic equilibrium; and (2) there is a relatively large amount of data with which to assess the impoundment's biological, chemical, and physical structure and function over time. The data were analyzed for historical trends. Evidence of such trends was interpreted and used to assess present reservoir trophy, to predict future reservoir trends, and to indicate future management possibilities. [NT]

NTIS No: PB88-120605/HDM

Title: Direct/Delayed Response Project: Field Operations and Quality Assurance Report for Soil Sampling and Preparation in the Northeastern United States. Volume 2. Preparation

Performing Organization: Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV.
Report No: EPA/600/4-87/030B
Sponsoring Organization: Environmental Monitoring Systems Lab., Las Vegas, NV.
Notes: See also Volume 1, PB88-120597.;
Sponsored by Environmental Monitoring Systems Lab., Las Vegas, NV.
Date: Sep 87 Pages: 152p NTIS Price Code: PC A08/MF A01
Language: English

Abstract: The Direct/Delayed Response Project Soil Survey includes the mapping, characterization, sampling, preparation, and analysis of soils in order to assess watershed response to acidic deposition within various regions of the United States. Soil samples collected by sampling crews in the Northeastern region were processed at preparation laboratories before being sent for analysis at analytical laboratories. Volumes I and II summarize the procedural and operational compliance with protocols used by the sampling crews and by the preparation laboratories, respectively. Deviations from protocols and difficulties encountered are identified and discussed. [NT]

02596542

Title: DRAIN WATER QUALITY FROM ARID IRRIGATED LANDS.

Author: Ayars, J. E.; Patton, S. H.; Schoneman, R. A.

Corporate Source: USDA, Fresno, CA, USA

Conference Title: Drainage Design and Management, Proceedings of the Fifth National Drainage Symposium.

Conference Location: Chicago, IL, USA Conference Date: 1987 Dec 14-15 Sponsor: ASAE, St. Joseph, MI, USA; American Soc of Agronomy, Madison, WI, USA; ASCE, New York, NY, USA; Corrugated Plastic Tubing Assoc; Crop Science Soc of America, Madison, WI, USA; et al

E.I. Conference No.: 11232

Source: ASAE Publication 07-87. Publ by ASAE, St. Joseph, MI, USA p 220-230

Publication Year: 1987

Language: English

Document Type: PA; (Conference Paper)

Abstract: Soil profile and drain water quality parameters are presented for a 50 ha research site located on the west side of the San Joaquin Valley. Statistical analysis of the soils data indicated differences by depth and location within the field. The data indicate that the top . 9 m of the profile is statistically different from the remainder of the profile throughout the field. Water quality parameters for drain flows taken through the field reflect the distribution of salinity in the field. 9 refs. [COM]

1091667

Dynamics of a lake ecosystem.

Biomathematics and related computational problems (Naples, 1987)

Ardito, A. (Istituto Matematico G. Castelnuovo", Universita di Roma La Sapienza" , 00100 Rome, Italy)
De Gregorio, S. (Istituto Matematico G. Castelnuovo", Universita di Roma La Sapienza" , 00100 Rome, Italy)
Lamberti, L. (Istituto Matematico G. Castelnuovo", Universita di Roma La Sapienza" , 00100 Rome, Italy)
Ricciardi, P. (Istituto Matematico G. Castelnuovo", Universita di Roma La Sapienza" , 00100 Rome, Italy)
Corporate Source Codes: I-ROME; I-ROME; I-ROME; I-ROME

1988,
Kluwer Acad. Publ., Dordrecht,; 111--119,,
Language: English
Document Type: Proceedings Paper
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (6 lines)

Summary: We study the dynamical behaviour of a lake ecosystem considering a three-components model consisting of animals, food and pollution. We examine the role of pollution in two different schemes considering the conditions leading to ecological disaster. In standard situations the system reduces to a two-component animal-food system. Stationary and periodic solutions of this system are globally attracting." For the entire collection see MR 89f:92002.

Reviewer: Summary
Type of Abstract: Abstract
Proceedings Reference: 89f#92002; 974 346 [MAT]

NTIS No: PB88-190756/HDM
Title: National Surface Water Survey, Western Lake Survey (Phase 1 - Synoptic Chemistry) Quality Assurance Report
Performing Organization: Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV.
Report No: EPA/600/4-87/037
Sponsoring Organization: Environmental Monitoring Systems Lab., Las Vegas, NV.
Notes: See also PB87-234928.; Sponsored by Environmental Monitoring Systems Lab., Las Vegas, NV.
Date: Nov 87 Pages: 312p NTIS Price Code: PC A14/MF A01
Language: English

Abstract: The quality assurance program for the Western Lake Survey - Phase I was designed to ensure that the data collected were of known and acceptable quality. The quality assurance program was based on similar activities conducted for the Eastern Lake Survey; -Phase I and included the following major elements: Selection of analytical laboratories, training of field sampling and field laboratory crews, on-site evaluation of field operations and analytical laboratories, daily communications with survey participants, and verification and evaluation of data collected. Quality assurance and quality control samples were used to identify, qualify, and quantify sources of sampling and analytical variability in terms of precision, accuracy, bias, and detectability. The relative importance of these sources of variation was assessed statistically. [NT]

1954991
Optimal policies in a bioeconomic model of eutrophication.
Mosetti, Renzo
Applied Mathematics and Computation, 1988, 26, no. 3, part II, 257--265. ISSN: 0096-3003 CODEN: AMHCBQ
Language: English
Document Type: Journal
Subfile: MR (Mathematical Reviews) AMS
Abstract Length: SHORT (5 lines)

Summary: We obtain optimal policies for the control of nutrients in a basin subjected to eutrophication. The aim is to minimize the costs of the nutrients' removal plus the costs of the environmental damage due to poor water quality. The optimal solutions, in terms of phytoplankton biomass, are shown to be most rapid approach paths to a constant value." [MAT]

1911810

A spatial simulation model of land use changes in a piedmont county in Georgia.

Turner, Monica Goigel (Department of Mathematics, University of Georgia, Athens, 30602, Georgia)
Corporate Source Codes: 1-GA
Applied Mathematics and Computation, 1988, 27, no. 1, 39--51.
Language: English
Document Type: Journal
Subfile: CMP (Current Mathematical Publications) AMS
Type of Abstract: No review planned
[MAT]

02768102

Title: Spreadsheet watershed modeling for nonpoint-source pollution management in a Wisconsin Basin.

Author: Walker, John F.; Pickard, Susan A.; Sonzogni, William C.
Corporate Source: US Geological Survey, Madison, WI, USA
Source: Water Resources Bulletin v 25 n 1 Feb 1989 p 139-147
Publication Year: 1989
Language: English
Document Type: JA; (Journal Article)
Treatment: A; (Applications); T; (Theoretical)

Abstract: A straightforward pollutant input accounting approach is presented in the form of an existing model (WATERSHED) that has been adapted to run on modern electronic spreadsheets. As an application, WATERSHED is used to assess options to improve the quality of highly eutrophic Delavan Lake in Wisconsin. WATERSHED is flexible in that several techniques, such as the Universal Soil Loss Equation or unit-area loadings, can be used to estimate nonpoint-source inputs. Once the model parameters are determined (and calibrated, if possible), the spreadsheet features can be used to conduct a sensitivity analysis of management options. In the case of Delavan Lake, it was concluded that, although some nonpoint controls were cost-effective, the overall reduction in phosphorus would be insufficient to measurably improve water quality. (Edited author abstract) 12 Refs. [COM]

1950982 CMP 967 303

Stochastic optimization models for lake eutrophication management.

Somlyody, Laszlo

Wets, Roger J.-B. (Department of Mathematics, International Institute for Applied Systems Analysis, 2361 Laxenburg, Austria)

Corporate Source Codes: A-IASA

Operations Research. The Journal of the Operations Research Society of America, 1988, 36, no. 5, 660--681. CODEN: OPREAI

Language: English

Document Type: Journal

Subfile: CMP (Current Mathematical Publications) AMS

Type of Abstract: No review planned

[MAT]

NTIS No: PB88-200753/HDM

Title: Western Lake Survey Phase 1. Data Base

Performing Organization: Environmental Protection Agency, Washington, DC. Office of Acid Deposition, Environmental Monitoring, and Quality Assurance.

Report No: EPA/600/4-87/027

Sponsoring Organization: Northrop Services, Inc., Research Triangle Park, NC.; Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV.; Radian Corp., Research Triangle Park, NC.; Department of Energy, Washington, DC.

Notes: See also PB88-146824.; Prepared in cooperation with Northrop Services, Inc., Research Triangle Park, NC., Lockheed Engineering and Management Services Co., Inc., Las Vegas, NV., and Radian Corp., Research Triangle Park, NC. Sponsored by Department of Energy, Washington, DC.

Date: Sep 87 Pages: 122p NTIS Price Code: PC A06/MF A01

Language: English

Abstract: The National Surface Water Survey (NSWS) was initiated by EPA when it became apparent that existing data could not be used quantitatively to assess the present chemical and biological status of surface waters in the United States. Phase I of the NSWS is designed to provide a geographically extensive data base of sufficient quality to estimate with known confidence the number of acidic and potentially sensitive lakes (lakes with low acid-neutralizing capacity or ANC), identify their location, and describe their present chemical status from a broad-scale, regional perspective. Phase I was conducted in the fall of 1985 in five high elevation areas in the western United States. [NT]

III C. Water-Impact

NTIS No: PB88-200811/HDM
Title: Causes of Wetland Loss in the Coastal Central Gulf of Mexico. Volume 2. Technical Narrative; Final rept.
Performing Organization: Louisiana State Univ., Baton Rouge. Center for Wetland Resources.
Report No: MMS/GM-87/0120; OCS/MMS-87/0120
Sponsoring Organization: Minerals Management Service, New Orleans, LA. Gulf of Mexico OCS Regional Office.
Notes: See also Volume 1, PB88-200803 and Volume 3, PB88-200829.; Sponsored by Minerals Management Service, New Orleans, LA. Gulf of Mexico OCS Regional Office.; Also available in set of 3 reports PCE99, PB88-200795.
Date: Jan 88 Pages: 414p NTIS Price Code: PC A18/MF A01
Language: English

Abstract: In 1985, the Minerals Management Service initiated an investigation to study the causes of wetland loss in the coastal Gulf of Mexico as part of its outer continental shelf environmental studies program. The purpose of the two-year study was to investigate the factors that contribute to wetland loss and to determine specifically what percentage of the loss is directly and indirectly related to Federal offshore oil and gas development. The primary goal of the Coastal Effects Program is to delineate the onshore impacts of offshore oil and gas development activities. Volume II provides an introduction to the study, direct impacts of OCS activities, saltwater intrusion, subsidence and sedimentation, and landscape patterns and aerial imagery. [NT]

02267146

Title: EFFECT OF EROSION UPON COASTAL PROPERTY VALUES.

Author: Terich, Thomas A.; Gabriel, Anthony D.
Corporate Source: Western Washington Univ, Bellingham, WA, USA
Conference Title: Coastal Zone '87, Proceedings of the Fifth Symposium on Coastal and Ocean Management.
Conference Location: Seattle, WA, USA Conference Date: 1987 May 26-29
Sponsor: American Fishing Tackle Manufacturers Assoc, Arlington Heights, IL, USA; API, Washington, DC, USA; American Shore & Beach Preservation Assoc, Berkeley, CA, USA; American Soc for Environmental Education, Durham, NH, USA; ASCE, New York, NY, USA; et al
E.I. Conference No.: 09992
Source: v 2. Publ by ASCE, New York, NY, USA p 2391-2401 Publication Year: 1987
ISBN: 0-87262-602-4
Language: English
Document Type: PA; (Conference Paper)

Abstract: The effect of long-term severe erosion upon coastal property values is tested at a site along the Pacific Coast of Washington State. Statistical analysis of mean sales values suggests the erosion has had little impact on land values. This conclusion must remain tenuous because of the nature of the site. The problems and issues of studying the economic impacts of coastal erosion are presented. (Author abstract) 8 refs. [COM]

EFFECT OF SANITARY LANDFILLS ON SURFACE AND GROUND WATER QUALITY: A STATISTICAL ANALYSIS,

BORDEN ROBERT C. AND ; YANOSCHAK THOMAS M. NORTH CAROLINA STATE UNIV,
AMER WATER RESOURCES ASSN COASTAL WATER RESOURCES SYM, WILMINGTON, NC, MAY 88, P511(8)

CONF PAPER SURFACE AND GROUND WATER QUALITY MONITORING DATA FROM 71 SANITARY LANDFILLS IN NORTH CAROLINA WERE ANALYZED TO DETERMINE THE NATURE AND EXTENT OF CONTAMINATION PROBLEMS. SIGNIFICANT INCREASES WERE DETECTED IN THE AVERAGE POLLUTANT CONCENTRATIONS IN GROUNDWATER AND DOWNSTREAM SURFACE WATER SAMPLES WHEN COMPARED WITH UPSTREAM SURFACE WATER SAMPLES. THE LARGEST PERCENTAGE INCREASES WERE NOTED FOR ZINC, TURBIDITY, TOC, CONDUCTIVITY, TOTAL DISSOLVED SOLIDS, AND LEAD. VIOLATIONS OF STATE GROUNDWATER QUALITY STANDARDS FOR HEAVY METALS AND

HAZARDOUS ORGANIC COMPOUNDS WERE OBSERVED AT 53% OF THE LANDFILLS WITH ADEQUATE DATA. (1 MAP, 7 REFERENCES, 4 TABLES) [ENV]

89-02187
Environmental statistics reveal increase in nitrate levels
Anon.
WATER WASTE TREAT VOL. 31, NO. 4, p. 6, Publ.Yr: 1988
Languages: ENGLISH
Journal Announcement: V20N2

The quantity of heavy metals in dumped sewage sludge has generally decreased over the past decade, but an upward trend in nitrate levels has been recorded in some rivers, with the largest increases found in areas with intense farming. [PA]

NTIS No: PB89-161830/HDM
Title: Fish Communities in Lakes in Subregion 2B (Upper Peninsula of Michigan) in Relation to Lake Acidity. Volume 1
Performing Organization: Northrop Services, Inc., Corvallis, OR. Report No: EPA/600/3-89/021A
Sponsoring Organization: Kilkelly Environmental Associates, Inc., Raleigh, NC.; Michigan State Univ., East Lansing.; Lockheed Engineering and Sciences Co., Washington, DC.; Corvallis Environmental Research Lab., OR. Notes: See also Volume 2, PB89-161848.; Sponsored in part by Contract EPA-68-03-3439 and Grant EPA-R-814030. Prepared in cooperation with Kilkelly Environmental Associates, Inc., Raleigh, NC., Michigan State Univ., East Lansing, and Lockheed Engineering and Sciences Co., Washington, DC. Sponsored by Corvallis Environmental Research Lab., OR.
Date: Mar 89 Pages: 132p NTIS Price Code: PC A07/MF A01
Language: English

Abstract: Surveys of fish community status were conducted in summer 1987 in 49 lakes in Subregion 2B, the Upper Peninsula of Michigan, as part of Phase II of the Eastern Lake Survey. Lake selection involved a variable probability sampling design. Fish communities were surveyed using gill nets, trap nets, beach seines, and angling. Duplicate surveys were conducted for 10 of the 49 lakes as part of the quality assurance/quality control protocol. Fish were collected in 47 of the 49 lakes surveyed. Extrapolation of the results to the Eastern Lake Survey Phase II target population suggests that 99.4% of the lakes in the area support fish. For the 49 survey lakes, the number of fish species caught per lake (species richness) was lower in seepage lakes (without inlets or outlets) than in non-seepage lakes and was also lower in lakes with lower pH, ANC, calcium (and other base cations), DOC, and silica and with higher levels of extractable aluminum. In contrast to the large number of variables associated with fish presence/absence and species richness, variations in the numbers of fish caught and catch per unit effort among lakes appeared to be independent of lake characteristics. [NT]

02696993

Title: Geographic information systems for cumulative impact assessment.

Author: Johnston, Carol A.; Detenbeck, Naomi E.; Bonde, John P.; Niemi, Gerald J.
Corporate Source: Univ of Minnesota, Duluth, MN, USA
Source: Photogrammetric Engineering and Remote Sensing v 54 n 11 Nov 1988 p 1609-1615
Publication Year: 1988
CODEN: PERSDV ISSN: 0099-1112
Language: English
Document Type: JA; (Journal Article)
Treatment: G; (General Review)

Abstract: Geographic Information Systems (GIS) are a valuable tool for assessing cumulative environmental impact, the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions. GIS can be used to quantify rates of regional resource loss by comparing data layers representing different years. A cumulative impact evaluation method involving aerial photointerpretation, multivariate statistical analysis, and GIS techniques was developed and used to relate past and present wetland abundance with stream water quality in the Minneapolis-St. Paul metropolitan area. The results demonstrate the importance of wetland position in the watershed to water quality, a relationship which would have been difficult to detect without the benefit of GIS assisted analysis. (Edited author abstract) 27 Refs. [COM]

88-04958

Numerical modeling of solute transport patterns in the Dammam aquifer

Al-Layla, R.; Yazicigil, H.; de Jong, R.
Dep. Civ. Eng., King Fahd Univ. Pet. and Miner., Dhahran, Saudi Arabia
WATER RESOUR. BULL VOL. 24, NO. 1, pp. 77-85, Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

During the past two decades, the Kingdom of Saudi Arabia has witnessed rapid development in its agricultural and urban areas, which has resulted in greater reliance being placed on its ground water aquifers. The intensive development, particularly along the coastline and in the absence of adequate replenishment sources, has led to major deterioration in the quality and quantity of ground water resources. A numerical model of the Dammam aquifer in the Eastern Province is developed and used to predict the extent of the saline intrusion in the aquifer. The types of stresses effecting the solute transport were identified and remedial measures were suggested. [PA]

NTIS No: PB87-214672/HDM

Title: Report on 1984-86 Federal Survey of PCBs (Polychlorinated Biphenyls) in Atlantic Coast Bluefish. Interpretive Report

Performing Organization: National Marine Fisheries Service, Washington, DC. Report No: NOAA-NMFS-86-2
Sponsoring Organization: Food and Drug Administration, Rockville, MD.; Environmental Protection Agency, Washington, DC.
Notes: See also PB86-218070.; Prepared in cooperation with Food and Drug Administration, Rockville, MD., and Environmental Protection Agency, Washington, DC.
Date: Mar 87 Pages: 169p NTIS Price Code: PC A08/MF A01
Language: English

Abstract: The report provides a description of a two year study on the levels of PCBs in east coast bluefish and provides an assessment of any potential health effects from PCBs in bluefish. [NT]

NTIS No: PB88-202064/HDM

Title: Selected Chemical Contaminants in Surface Sediments of Commencement Bay and the Tacoma Waterways, Washington, USA (Revised);

Performing Organization: Environmental Research Lab., Narragansett, RI.
Report No: EPA/600/J-87/341; ERLN-N010
Notes: Pub. in Marine Environmental Research v22 p271-295 1987.
Date: 1987 Pages: 27p NTIS Price Code: PC A03/MF A01
Language: English
Document Type: Journal article

Abstract: Eight metals, 21 organic priority pollutants, and 11 other contaminants and contaminant-related sediment characteristics were measured in surface sediments (upper 2 cm) at 21 locations in Commencement Bay and the Tacoma Waterways, Washington. Summary statistics were calculated and statistical approaches were applied to subsets of the data to classify sediment contamination. High concentrations of some contaminants appeared to be related to proximity to sources of contaminants. Depositional vectors, and chemical adsorption processes may also influence the spatial distribution of sediment contamination in the study area. [NT]

NTIS No: PB89-151047/HDM

Title: Statistical Analysis of Ground-Water Monitoring Data at RCRA (Resource Conservation and Recovery Act) Facilities, Interim Final Guidance

Performing Organization: Environmental Protection Agency, Washington, DC. Office of Solid Waste.
Report No: EPA/530/SW-89/026
Date: Feb 89 Pages: 148p NTIS Price Code: PC A07/MF A01
Language: English

Abstract: The document provides guidance to RRA Facility permit applicants and writers concerning the statistical analysis of ground-water monitoring data at RCRA facilities. Section 1 is an introduction to the guidance; it describes the purpose and intent of the document, and emphasizes the need for site-specific considerations in implementing the Subpart F regulations of 40 CFR Part 264. Section 2 provides the reader with an overview of the recently promulgated regulations concerning the statistical analysis of ground-water monitoring data (53 FR 39720: October 11, 1988). Section 4 discusses the important hydrogeologic parameters to consider when choosing a sampling interval. Section 4 provides guidance on choosing an appropriate statistical method. Section

5 covers statistical methods that may be used to evaluate groundwater monitoring data when background wells have been sited hydraulically upgradient from the regulated unit, etc. Section 6 includes statistical procedures that are appropriate when comparing ground-water constituent concentrations; and Section 7 presents the case where the level of each constituent is compared historically. [NT]

NTIS No: PB89-156640/HDM

Title: Chesapeake Bay Mainstem Monitoring Program Statistical and Analytical Support Contract: Final Report, Volume 1

Performing Organization: Martin Marietta Environmental Systems, Columbia, MD.

Report No: CBP/TRS-12/87

Sponsoring Organization: Environmental Protection Agency, Philadelphia, PA. Chesapeake Bay Program.

Notes: See also PB89-156657.; Sponsored by Environmental Protection Agency, Philadelphia, PA. Chesapeake Bay Program.

Date: Sep 87 Pages: 59p NTIS Price Code: PC A04/MF A01

Language: English

Abstract: The primary focus of this contract was the development of a statistical analysis framework for detection of trends in Chesapeake Bay water quality attributable to pollution control management actions. The report found that, while there are aspects of the main Bay water quality monitoring program that can be improved, the overall approach of the program is sound and will provide the empirical information needed to characterize and detect trends in Chesapeake Bay water quality and to evaluate the effectiveness of management actions. Continuation of this coordinated monitoring effort provides the best opportunity for generation of rigorous statements concerning the State-of-the-Bay and for the development of an ecologically sound water quality management strategy. [NT]

NTIS No: PB89-156657/HDM

Title: Chesapeake Bay Mainstem Monitoring Program Statistical and Analytical Support Contract: Final Report, Volume 2

Performing Organization: Martin Marietta Environmental Systems, Columbia, MD.
Report No: CBP/TRS-13/87
Sponsoring Organization: Environmental Protection Agency, Philadelphia, PA. Chesapeake Bay Program.
Notes: See also PB89-156640.; Sponsored by Environmental Protection Agency, Philadelphia, PA. Chesapeake Bay Program.
Date: Sep 87 Pages: 481p NTIS Price Code: PC A21/MF A01
Language: English

Abstract: The primary focus of this contract was the development of a statistical analysis framework for detiection of trends in Chesapeake Bay water quality attributable to pollution control management actions. The report found that, while there are aspects of the main Bay water quality monitoring program that can be improved, the overall approach of the program is sound and will provide the empirical information needed to characterize and detect trends in Chesapeake Bay water quality and to evaluate the effectiveness of management actions. Continuation of this coordinated monitoring effort provides the best opportunity for generation of rigorous statements concerning the State-of-the-Bay and for the development of an ecologically sound water quality management strategy. [NT]

02601439

Title: DEVELOPMENT OF A METHOD FOR DETERMINATION OF METHYLENE CHLORIDE EMISSIONS AT STATIONARY SOURCES.

Author: Butler, F. E.; Coppedge, E. A.; Suggs, J. C.; Knoll, J. E.; Midgett, M. R.; Sykes, A. L.; Hartman, M. W.; Steger, J. L. Corporate Source: US EPA, Research Triangle Park, NC, USA
Source: JAPCA (Journal of the Air Pollution Control Association) v 38 n 3 Mar 1988 p 272-277
Publication Year: 1988
Language: English
Document Type: JA; (Journal Article)
Treatment: A; (Applications); X; (Experimental)

Abstract: Prior to source sampling, laboratory experiments were conducted to determine the best sample container in which to collect an integrated sample. It was found that CH//2Cl//2 remained stable in Tedlar bags for at least four weeks. The analytical method selected was gas chromatography with flame ionization detection (GC/FID). The range of concentrations from the sources was 100 ppm to 27,000 ppm CH//2Cl//2. A statistical analysis of samples collected simultaneously showed no difference in the samples, proving good precision in both sampling and analysis. Some of the sample bags returned from the test sites developed leaks indicating that immediate on-site analysis is best. A comparison of results obtained in the field and the two laboratories showed that inter- and intra-laboratory precision was within 10 percent. (Edited author abstract) 8 refs. [COM]

NTIS No: PB88-202577/HDM

Title: Optimal Schemes for Ground Water Quality Monitoring in Shallow Aquifer, Dougherty Plain, Southwestern Georgia; Technical rept.

Performing Organization: Georgia Inst. of Tech., Atlanta. Environmental Resources Center.

Report No: ERC-03-87; USGS/G-1219-05

Sponsoring Organization: Georgia Inst. of Tech., Atlanta. School of Civil Engineering.; Geological Survey, Reston, VA. Water Resources Div.

Notes: Prepared in cooperation with Georgia Inst. of Tech., Atlanta. School of Civil Engineering. Sponsored by Geological Survey, Reston, VA. Water Resources Div.

Date: Mar 87 Pages: 57p NTIS Price Code: PC A04/MF A01

Language: English

Abstract: Geostatistical schemes for ground water quality monitoring in the shallow aquifer of Dougherty Plain, Georgia are presented. The desired monitoring network acts as an early warning system for ground water pollution in deeper layers. The authors have utilized the available data on hydraulic properties of the shallow aquifer to identify the zones which should be the primary locations for the sampling activities. Ranking criteria for the selection of the best sampling points are: the variance reductions; the medians; and the risk values. [NT]

IV. Hazardous Wastes

NTIS No: PB89-142673/HDM

Title: Evaluation of the Accuracy of Volumetric Leak Detection Methods for Underground Storage Tanks Containing Gasoline

Performing Organization: Vista Research, Inc., Mountain View, CA.

Report No: EPA/600/D-88/279

Sponsoring Organization: Environmental Protection Agency, Cincinnati, OH. Risk Reduction Engineering Lab.

Notes: Sponsored by Environmental Protection Agency, Cincinnati, OH. Risk Reduction Engineering Lab.

Date: Jan 89 Pages: 26p NTIS Price Code: PC A03/MF A01

Language: English

Abstract: The report summarizes the results of EPA's research program to evaluate the current performance of 25 commercially available volumetric test methods for the detection of small leaks in underground gasoline storage tanks. The leak rate measurable by these systems ranged from 0.26 to 6.78 L/h (0.97 to 1.79 gal/h) with a probability of detection at 95% and probability of false alarm of 5%. Five of the methods achieved a performance that was better than 0.57 L/h (0.15 gal/h). The measured performance was considerably poorer than the often claimed 0.19 L/h (0.05 gal/h). The performance of the methods evaluated here was limited by current protocol and practice rather than by hardware. Such limitations can be overcome by rather modest modifications to testing practice rather than by major system redesign. [NT]

NTIS No: PB88-202031/HDM

Title: Geostatistical Analysis of Palmerton Soil Survey Data; Journal article

Performing Organization: Environmental Monitoring Systems Lab., Las Vegas, NV.

Report No: EPA/600/J-87/349

Sponsoring Organization: Nevada Univ., Las Vegas.; Sparks (Allen R.), Las Vegas, NV.

Notes: Pub. in Environmental Monitoring and Assessment, v9 p239-261 1987.; Prepared in cooperation with Nevada Univ., Las Vegas, and Sparks (Allen R.), Las Vegas, NV.

Date: c1987 Pages: 14p NTIS Price Code: PC A03/MF A01

Language: English

Document Type: Journal article

Abstract: The paper describes statistical and geostatistical analyses of data from a soil sampling survey. Soil sampling was performed, in October and November 1985, to obtain information on the level, extent, and spatial structure of metal pollution of the soil in and around the Palmerton, Pennsylvania, NPL Superfund site. Measurements of the concentrations of cadmium, copper, lead, and zinc in the soil samples were obtained. An appropriate variance stabilizing transformation was determined. Estimation of variance components was performed. Generalized covariance functions for log-transformed concentrations were estimated for each metal. Block kriging was employed using the estimated spatial structure models to obtain estimated metal concentration distributions over the central part of Palmerton. (Copyright (c) 1987 by D. Reidel Publishing Company.) [NT]

NTIS No: PB88-198601/HDM

Title: Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)-Air Emission Models (for Microcomputers); Software

Performing Organization: Environmental Protection Agency, Research Triangle Park, NC. Office of Air Quality Planning and Standards.
Report No: EPA/SW/DK-88/046
Notes: The software is contained on 5 1/4-inch diskette, double sided, double density, compatible with the IBM PC microcomputer. Diskettes are in LOTUS 1-2-3 format. Price includes documentation, PB88-198619.
Date: Dec 87 Pages: 1 diskette NTIS Price Code: CP D02
Language: English

Abstract: Analytical Models are presented for estimating air emissions from Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF). Air emission models have been developed for aerated and nonaerated surface impoundments, land treatment facilities, landfills, and wastepiles. Emission model predictions are compared to available field data. The models have been assembled into a spreadsheet (Lotus 1-2-3) that is included in the report as floppy diskette for use on microcomputers...Software Description: The software was programmed using the Lotus 1-2-3 Spreadsheet for implementation on the IBM-PC computers. [NT]

NTIS No: PB88-249149/HDM

Title: Love Canal Emergency Declaration Area Habitability Study. Volume 5. Peer Review Summary: TRC (Technical Review Committee) Responses; Final rept

Performing Organization: CH2M Hill Southeast, Inc., Reston, VA.
Report No: EPA/902/4-88/002D
Sponsoring Organization: Life Systems, Inc., Cleveland, OH.; Environmental Protection Agency, New York. Region II.
Notes: See also Volume 4, PB88-249131.; Prepared in cooperation with Life Systems, Inc., Cleveland, OH. Sponsored by Environmental Protection Agency, New York. Region II.; Also available in set of 5 reports PC E99, PB88-249099.
Date: Jul 88 Pages: 506p NTIS Price Code: PC A22/MF A01
Language: English

Abstract: Environmental studies were conducted to provide data that could be used by the Commissioner of Health for the State of New York in determining whether the Emergency Declaration Area surrounding the Love Canal hazardous waste site is habitable. These volumes (II through IV) were reviewed by a peer review panel of expert scientists. The scientists concluded that each of the three environmental studies was well planned and well executed. Volume V summarizes the peer review and gives additional information or clarifications as requested during the peer review. Volume V also provides additional supplemental statistical analyses requested by the peer reviewer panel. [NT]

NTIS No: PB88-249123/HDM
Title: Love Canal Emergency Declaration Area Habitability Study. Volume 3. Soil Assessment: Indicator Chemicals; Final rept
Performing Organization: CH2M Hill Southeast, Inc., Reston, VA. Report No: EPA/902/4-88/002B
Sponsoring Organization: Environmental Protection Agency, New York. Region II.
Notes: See also Volume 2, PB88-249115 and Volume 4, PB88-249131.; Errata sheet inserted.; Portions of this document are not fully legible.; Sponsored by Environmental Protection Agency, New York. Region II.; Also available in set of 5 reports PC E99, PB88-249099.
Date: May 88 Pages: 347p NTIS Price Code: PC A15/MF A01
Language: English

Abstract: Environmental studies were conducted to provide data that could be used by the Commissioner of Health for the State of New York in determining whether the Emergency Declaration Area (EDA) surrounding the Love Canal hazardous waste site is habitable. The soil assessment compared concentrations of the Love Canal Indicator Chemicals found in the EDA to concentrations found in similar western New York communities. An analytical technique was developed to detect the indicator chemicals at very low levels, i.e. 1.0 ppb. The analytical technique utilized a gas chromatograph/mass spectrometer operating in the selected ion monitoring mode. The analytical results were statistically compared between the EDA and the comparison areas using a modified Wilcoxon rank sum test. [NT]

NTIS No: PB88-129556/HDM

Title: Methods for Assessing Exposure to Chemical Substances. Volume 9. Methods for Estimating Releases of Chemical Substances Resulting from Transportation Accidents; Final rept.

Performing Organization: Versar, Inc., Springfield, VA.
Report No: EPA/560/5-85/009
Sponsoring Organization: Environmental Protection Agency, Washington, DC. Office of Toxic Substances.
Notes: See also Volume 8, PB87-107850.; Sponsored by Environmental Protection Agency, Washington, DC. Office of Toxic Substances.
Date: Dec 87 Pages: 161p NTIS Price Code: PC A08/MF A01
Language: English

Abstract: The report presents methods for calculating expected annual releases of manufactured chemicals resulting from transportation accidents. The scope of the report is limited to releases en route rather than leaks and other releases at transportation terminals. A step-by-step method of calculating annual quantity released per mode of transportation is presented, and sources and limitations of the supporting data are discussed in detail. The method is suitable for comparing estimates of annual releases of several chemicals or for comparing releases by various modes of transportation for one chemical. A statistical analysis of the Department of Transportation (DOT) HAZMAT data base is included as an appendix to the report. [NT]

89-05685

Second chronological supplement to the carcinogenic potency database: Standardized results of animal bioassays published through December 1984 and by the National Toxicology Program through May 1986

Gold, L.S.; Slone. T.H.; Backman, G.M.; Magaw, R.; Da Costa, M.; Lopipero, P.; Blumenthal, M.; Ames, B.N.
Biol. and Med. Div., Lawrence Berkeley Lab., Berkeley, CA 94720, USA
ENVIRON. HEALTH PERSPECT VOL. 74, pp. 237-329, Publ.Yr: 1987
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

This paper is the second chronological supplement to the Carcinogenic Potency Database, published earlier in this journal (1,2,4). The authors report here results of carcinogenesis bioassays published in the general literature between January 1983 and December 1984, and in Technical Reports of the National Cancer Institute/National Toxicology Program between January

1983 and May 1986. This supplement includes results of 525 long-term, chronic experiments of 199 test compounds, and reports the same information about each experiment in the same plot format as the earlier papers: e.g., the species and strain of test animal, the route and duration of compound administration, dose level and other aspects of experimental protocol, histopathology and tumor incidence, TD sub(50) (carcinogenic potency) and its statistical significance, dose response, author's opinion about carcinogenicity, and literature citation. [PA]

89-02684

Symposium VI: New statistical approaches to the qualitative interpretation of toxicology data

Byrd, D.M.,III
Consult. Toxicol., Falls Church, VA 22046, USA
7. Annual Meeting of the American College of Toxicology Philadelphia, PA (USA) Nov 1986
J. AM. COLL. TOXICOL VOL. 7, NO. 5, pp. 559-563, Publ.Yr: 1988
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

This symposium describes some new statistical methods of use in the analysis of toxicology data for purposes of hazard evaluation, particularly as related to the qualitative phase of carcinogen risk assessment. Life table analysis of cancer bioassays is discussed. Current assumptions about the lethality of treatment and tumor can lead to incorrect interpretation of results. An introduction to the concepts of Bayesian statistics and how the application of judgmental probabilities can assist in reaching broad conclusions is presented. Bayesian methods to estimate the likelihood of bioassay outcomes given short-term test data are discussed. A Bayesian method is used to integrate data from different bioassays of the same substance. [PA]

V. Solid Waste

NTIS No: TIB/A88-83018/HDM

Title: Papier - Kunststoff - Verpackungen: Eine Mengen- und Schadstoffbetrachtung. Schlussbericht. (Paper - plastics - packaging products: Amount and harmful matters. Final report)

Performing Organization: Technische Univ. Berlin (Germany, F.R.). Inst. fuer Quantitative Methoden.
Sponsoring Organization: Umweltbundesamt, Berlin (Germany, F.R.).
Notes: In German,; With 170 refs., 170 figs.
Date: Feb 88 Pages: 331p NTIS Price Code: PC E07
Language: German

Abstract: Within the reported project a comprehensive evaluation of the national supply and waste recovery of paper/cardboard and plastics for the FRG (basis 1984/85) is given with special reference to packaging products from these materials. Quantitations on the one hand are based on secondary data, i.e. the computation and workup of statistical data, on the other hand, on own analyses of houshold waste. Both quantitation schemes were put into relation and have been evaluated. Two potentials of harmful matters (heavy metals and halogenes) were computed from the results of chemical analyses of household waste and unused product samples together with the mass related data. With the workup of secondary data the origins of harmful matter concentrations are traced and their relevance to waste treatment techniques is briefly outlined. Alternative packaging materials are discussed by means of scenarios, to minimize the evironmental effects related to their production and disposal. (orig./RHM). (TIB: FR 1087+a.) (Copyright (c) 1988 by FIZ. Citation no. 88:083018.) [NT]

VI. Radiation

1979329

Matematicheskoe modelirovanie avariinogo bloka Chernobylskoi AES. Mathematical modeling of the safety block of the Chernobyl nuclear power plant

Maslov, V. P.
Myasnikov, V. P.
Danilov, V. G.
Publ: Nauka", Moscow,
1988, 144 pp.
Price: 1.50 r.
Language: Russian
Document Type: Book
Subfile: CMP (Current Mathematical Publications) AMS
Type of Abstract: Review pending
[MAT]

VII. Risk Assessments

NTIS No: PB89-145031/HDM

Title: Comparative Toxicity Based on Similar Asymptotic Endpoints (Journal Version); Journal article

Performing Organization: Corvallis Environmental Research Lab., OR.

Report No: EPA/600/J-88/243

Sponsoring Organization: Northrop Services, Inc., Corvallis, OR. Notes: Pub. in Archives of Environmental Contamination and Toxicology, v17 p273-280 1988.; Prepared in cooperation with Northrop Services, Inc., Corvallis, OR.

Date: c1988 Pages: 10p NTIS Price Code: PC A02/MF A01

Language: English

Abstract: Results of the laboratory tests are used in assessing the environmental risk of exposure to industrial chemicals. The combined effects of dose-level exposure and time-duration exposure are tested in the laboratory, but only a single endpoint reflecting the dose-level exposure at the end of the test period is routinely reported and used. At times, this might be sufficient, or the data otherwise inappropriate for calculation of more than a single endpoint. Nevertheless, an approach that makes a more complete use of existing sufficient test information is needed. One method is presented in the paper, the focus of which is the evaluation of an LC50 endpoint at a calculated exposure time. This calculation determines a condition for the toxicity curve to become established along the time axis. The authors refer to this condition of the dose-response curve as an asymptotic state and the LC50 calculated from it as the asymptotic LC50. An analysis of 152 toxicity tests using fathead minnows show that the 96-hr LC50 is 25% more conservative than the asymptotic LC50. The calculation of LC50 under asymptotic conditions better enables comparing toxicities of different chemicals on the basis of comparable dose-level and time-duration exposures. (Copyright (c) 1988 Springer-Verlag New York Inc.) [NT]

89-02511

Mortality study of workers exposed to dimethylformamide and/or acrylonitrile

Chen, J.L.; Fayerweather, W.E.; Pell, S.
E.I. Du Pont de Nemours and Co., Inc., ERD, Med. Div., N-11510,
Wilmington, DE 19898, USA
J. OCCUP. MED VOL. 30, NO. 10, pp. 819-823, Publ.Yr: 1988 SUMMARY
LANGUAGE - ENGLISH
Languages: ENGLISH

Workers exposed to dimethylformamide (DMF) and/or acrylonitrile (ACN) were observed from 1950 through 1982 for mortality. The wage-roll workers exposed to DMF showed significant excess in total deaths attributable mainly to ischemic heart disease and external causes when compared with rates from E.I. Du Pont de Nemours & Co. However, there were no significant excesses in mortality when expected numbers were bases on US or local statistics. No dose-response relationships were observed between DMF or ACN exposure and mortality. The significant excesses in mortality among employees exposed to DMF and/or ACN could be due to statistical chance or life-style factors. [PA]

Nonstatistical vs. illusory statistical approaches to the estimation of risk from environmental chemicals

Sokinger, H.E.
9 Twin Hills Ridge Dr., Cincinnati, OH 45228, USA
DANG. PROPER. IND. MATER. REP VOL. 7, NO. 1, pp. 2-8, Publ.Yr: 1987
Languages: ENGLISH

It is the purpose of this paper to dispel a few unbecoming statistical notions, one of which is that thresholds for chemical carcinogens do not exist. Another, that somehow, some time, statistical equations can be developed with enough constants to accommodate all carcinogenic situations. Also, the notion that 1 in 200 million is an appropriate and realistic environmental cancer risk must be renounced and brought into line with other daily-encountered involuntary risks that are far less rigid. [COM]

02617982

Title: OVERHAULING HEALTH EFFECTS PERSPECTIVES.

Author: Schwebach, Gerhard, H; Cafaro, Dennis; Egan, James; Grimes, Max; Michael, Gene
Source: Journal Water Pollution Control Federation v 60 n 4 Apr 1988 p 473-479
Publication Year: 1988
CODEN: JWPFA5 ISSN: 0043-1303
Language: English
Document Type: JA; (Journal Article)
Treatment: G; (General Review); X; (Experimental)

Abstract: The city of Colorado Springs, Colorado conducted an epidemiology study specifically designed to prove or disprove the hypothesis that gastrointestinal illness rates at park irrigated with potable water were no different from gastrointestinal illness rates reported at parks irrigated with nonpotable water of wastewater origin. The 2-year prospective cohort epidemiology study, which consisted of 2642 subjects randomly selected and analyzed, used bivariate and multivariate statistical analysis techniques. The data supported the hypothesis that there was no difference in self-reported gastrointestinal illness rates between those park visitors in parks watered with potable water versus those watered with nonpotable water of either wastewater or runoff origin. Additional study results are discussed. 15 refs. [COM]

88-05564

Risk-qualified mapping of polychlorinated dibenzodioxin contamination

Bryan, R.C.; Splitstone, D.E.; Exner, J.H. (ed.)
Geostat Syst., Inc., P.O. Box 1193, Golden, CO 80402, USA 191. Meeting of the Americian Chemical Society on Solving Hazardous Waste Problems: Learning from Dioxins New York, NY (USA) 13-18 Apr 1986
SOLVING HAZARDOUS WASTE PROBLEMS: LEARNING FROM DIOXINS pp. 247-258, Publ.Yr: 1987
AMERICAN CHEMICAL SOCIETY, WASHINGTON, DC (USA)
ACS SYMP. SER., NO. 338, , ;
SUMMARY LANGUAGE - ENGLISH
Languages: ENGLISH

Nonparametric geostatistics is a useful tool for the adequate assessment of the magnitude and spatial distribution of alleged contamination at a potential hazardous waste site. The resulting mappings of expected contamination as well as risks of making incorrect remedial decisions can support the development of effective and cost-controlled site remediation. Because of the nature of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in soils, traditional geostatistical techniques provide little assistance in producing risk qualified mappings of site contamination. [PA]